

MAR 4 1958

UP

THE RAILWAY GAZETTE

Price: Two Shillings.

FRIDAY, FEBRUARY 7, 1958

Annually £5 by post



WAGON BEARING UNITS FOR HIGH-SPEED FREIGHT SERVICE

Timken wagon bearing units are designed for simple application to new and existing freight stock. These units are now in service on more than 1,000 British Railways 20-ton Guards' Brake Vans and in an increasing number of British Railways 21-ton hopper wagons.

Each wagon bearing unit embodies a pair of Timken tapered-roller bearings made from high nickel alloy case hardening steel, giving a hard wear-resisting surface and a tough resilient core.

The design of the unit and the material used for the bearings combine to enable the unit to be pressed directly on to the journal in an ordinary wheelpress.

TIMKEN

Regd.
Trade
Mark:
TIMKEN

tapered-roller-bearing axleboxes

MADE IN ENGLAND BY BRITISH TIMKEN LTD.

DUSTON, NORTHAMPTON (HEAD OFFICE); DAVENTRY AND BIRMINGHAM



Peters Seat Frames

were used for the luxury-comfort seating made for the 1st Class saloons in the Diesel Railcars built by Cravens Ltd., Sheffield, for the North Eastern Region of British Railways.

G. D. PETERS & CO., LTD.

Manufacturers of:

Vacuum Trunks:

Wedge Automatic Couplers:

Power-Operated Door Equipment:

Carriage Washing Plant:

Seats and Blinds:

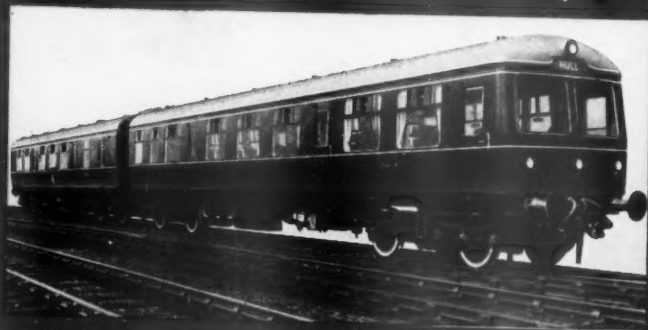
"Sundale" Insulation Boards:

"Paywood" Panelling:

Ventilators:

Welding Plant and

Welding Electrodes.



PETERS

OF SLOUGH

(A MEMBER OF THE G. D. PETERS GROUP)

G. D. Peters & Co. Ltd., Engineers, Slough, Bucks. Telephone: Slough 23261. Telegrams: "Peters", Slough.

THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer • TRANSPORT • The Railway News
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.
RAILWAYS ILLUSTRATED • ESTABLISHED 1835 • RAILWAY OFFICIAL GAZETTE

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1.

Telephone: WHitehall 9233 (20 lines) Telegrams: "Trazette Parl, London"

BRANCH OFFICES

GLASGOW: 139, Bothwell Street, C.2 Central 4646

NEWCASTLE-ON-TYNE: 21, Mosley Street Newcastle-on-Tyne 22239

MANCHESTER: Century Insurance Building, St. Peter's Square Central 7667-8-9

BIRMINGHAM: 90, Hagley Road, Edgbaston Edgbaston 2466

LEEDS: 70, Albion Street Leeds 27174

BRISTOL: 8, Upper Berkeley Place, Clifton Bristol 21930

Annually £5 by post. Single copies, Two shillings.

Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Editor : B. W. C. Cooke, Assoc. Inst. T.

Vol. 108]

FRIDAY, FEBRUARY 7, 1958

[No. 6

CONTENTS

	PAGE
Editorial Notes	149
Further Revision of Regional Boundaries	151
A.T.C. on British Railways	152
Aerial Photography	153
Letters to the Editor	154
The Scrap Heap	155
Overseas Railway Affairs	156
Adjustments in British Railways Regional Boundaries	158
Remodelling of Ajmer Workshops—2	160
"Air-Rail" Link with London Airport	162
Fourth Class Coaches for Rhodesia Railways	163
Personal	165
New Equipment and Processes	168
News Articles	170

Developing Railways in the Commonwealth

NEVER before has the British Commonwealth needed railways as much as it does today and will continue to need in the foreseeable future. Most of its members have been developing their railway systems by improving and adding to their equipment or building new lines, or both. It is essential that this process continue. The countries overseas must have enough efficient railway transport to meet their economic needs both now and in the future—which means looking ahead, for railway facilities cannot be expanded in a hurry adequately to answer sudden demands. Industry in Britain, including that important part of it which supplies the varied needs of railways, must have markets in the Commonwealth. On the United Kingdom lies the main responsibility for ensuring the economic wellbeing, with far-reaching political implications, of those African and Asian territories which are still under-developed. There are disquieting signs that the vital growth of railways in some of those countries may be arrested by financial stringency. The success of the Indian Second Five-Year Plan, which includes considerable development of the railways, is threatened through lack of sterling. This matter was discussed recently by Mr. Harold Macmillan in Delhi, and also in Karachi, though plans for railway development in Pakistan are less ambitious in proportion. It has been far from

easy to borrow, in London, capital for expansion of East African Railways; the development programme for that system recommended in September last by the East African Transport Advisory Council is restricted to immediate essentials. The Government of the Federation of Rhodesia & Nyasaland, because of the reduction in sterling balances occasioned by the fall in copper prices, has shelved the railway electrification plans referred to in our January 17 issue, though the Rhodesia Railways have to some extent provided recently for future needs by acquiring relatively large numbers of steam and diesel locomotives and other plant. British manufacturers of railway material, who have an unrivalled knowledge of local conditions and requirements, are ready to supply the railways in Commonwealth countries in Africa and Asia. It is for the home Government, in conjunction with the other Governments in the Commonwealth, to initiate measures to provide funds by loans and other means which will enable territories overseas to develop their railways. The matter is urgent, and should receive attention before the Commonwealth Conference to be held later this year.

The Late Mr. Ashton Davies

THE railway age of individuality which, already on the decline since the amalgamations of 1923, to all practical purposes died the death when nationalisation came into effect, permitted the rise of numerous personalities. Outstanding even among these was Mr. Ashton Davies, whose death at the age of 84 is recorded elsewhere in this issue. Mr. Ashton Davies, Vice-President of the L.M.S.R. from 1938 until his retirement in 1944, was a firm believer in personal contacts and salesmanship through the individual as well as through advertising. He became a railway "name," known to railway personnel and travelling public alike, largely through the advertisements bearing his photograph and the exhortation "ask Mr. Ashton Davies," which were reproduced in the Press throughout the country. He was appointed to the newly-created position of Chief Commercial Manager of the L.M.S.R. in 1932. In him was vested responsibility for all aspects of the company's goods and passenger business and, as a result of his work, the whole attitude of the railway towards the public changed. For the first time users were asked to state their requirements instead of merely being told what services were available. The results were reflected in the reputation Mr. Ashton Davis gained as the outstanding railway salesman of his time.

The Late Mr. A. E. Hudd

IT is with particular regret that we record elsewhere in this issue the untimely death of Mr. Alfred Ernest Hudd, a pioneer of the inductive automatic system of train control. In recent months Mr. Hudd's researches have received especial attention. Notwithstanding the long and successful experience of the Great Western Railway with its own system of A.T.C., the British Transport Commission, after thorough investigation, has decided to adopt a method of train control which uses features of both systems. In his younger days Mr. Hudd, who was particularly well known in the field of electrical and signal engineering, played a leading part in the electrification of the Liverpool & Southport line. He visited many countries and a number of his ideas on signalling have been incorporated in the railways of Australia and of the U.S.A. as well as in this country. His most outstanding achievement was effected in connection with a system of automatic train control installed on the Fenchurch Street - Southend line of the L.M.S.R. It is gratifying that Mr. Hudd lived to see the incorporation of his work in the new standard system now being introduced on British Railways.

L.A.M.A. Elections

THE election of Sir George H. Nelson, Bart., F.C.G.I., Chairman of the English Electric Group, as this term's President of the Locomotive & Allied Manufacturers' Association of Great Britain, is a logical development of the wider field covered by the Association as

compared with that influenced by the earlier Locomotive Manufacturers' Association, from which it was formed on January 1, 1956. The retiring President of L.A.M.A., Mr. Harold Wilmot, C.B.E., Chairman & Managing Director of Beyer, Peacock & Co. Ltd., is an acknowledged leader of the British locomotive industry. Similarly, Sir George Nelson is an equally well-recognised representative of Britain's fast-developing electrical activities. To a certain extent his election was foreshadowed by the appointment of Mr. C. C. H. Wade, Manager, Traction Sales & Contracts of the English Electric Co. Ltd., as the first Chairman of L.A.M.A. That appointment illustrates the Association's awareness of, and interest in, the emphasis now being laid on the use of diesel and electric motive power under the railway modernisation plan. He has been succeeded by Mr. G. T. Owen, Managing Director of the North British Locomotive Co. Ltd. A strong team has been succeeded by another equally effective, and the L.A.M.A. is to be congratulated on placing its well-being in the hands of men whose ability has been so well demonstrated.

Railway Management

THE many papers on railway management have seldom included one so full of penetrating observations as that due to be given last Tuesday by Mr. E. W. Arkle, Director of Traffic Services, British Railways, London Midland Region, to the North Western Section of the Institute of Transport; in his unavoidable absence, it was read by Mr. J. Royston, Divisional Traffic Manager, Manchester. Mr. Arkle's brief analysis of the difference between railway management and most others, which lies inter alia in the controls imposed on railways from outside, and in the widely scattered nature of the railway business, is excellent. In the same section, he refers to the advent to the railway industry of "so many people from other fields of activity that there is a tendency nowadays to feel anyone can run a railway," though he believes that some who come late in life to the railways would admit that railway management demands certain special qualities. Equally enlightening are his able summaries of what constitute good commercial and operating managers. Without being cynical, he has no illusions as to the efficacy of efforts at large-scale personal contact with subordinates. These, however, are only a few points in a paper which should be widely studied.

Steam Locomotive Spares for Argentina

SOME 200 orders for spare parts for steam locomotives, to the total value of about £4,500,000, have now been placed with 44 different British firms by the Argentine State Railways mission in London. Deliveries are making good progress, and it is hoped that all will have been completed by September, 1959. The spares are urgently needed for implementation of the rehabilitation plan of the Argentine railways; the British manufacturers concerned can be relied on to see that the purpose of the Mission is not largely stultified by late deliveries. A particularly gratifying feature of these transactions has been the co-operation which the Mission has received, both from Baring Bros. & Co. Ltd., on behalf of a group of London bankers, in making the credit available, and from the makers of the spare parts. For many years the major railways in Argentina obtained their steam locomotives from this country, and British manufacturers are particularly well equipped to supply what is required, not least because of their knowledge of local conditions.

Delays Caused by Parcels Traffic

PARCELS traffic was stated in a recent letter to *The Times* to delay passenger trains, and the writer suggested its segregation in parcels trains. In a reply, Mr. J. H. Brebner, Public Relations Adviser to the British Transport Commission, has pointed out that British Railways are developing as fast as possible the policy of running separate parcels trains; that the number of such

trains averages 500 each weekday; and that although these services are mainly between large centres, on some secondary and local routes where diesel passenger trains have been introduced separate parcels services are being run to minimise delay to the passenger trains. It is also the policy to exclude, where possible, parcels traffic from many express passenger trains. Despite this, and the relatively small proportion of passenger train delays shown on examination to have been caused by station working, many passengers can see for themselves their trains being delayed while parcels and mails are being loaded or offloaded. In most cases adequate station times seem to have been allowed. The solution appears to be better attention to station working, and, in view of the importance of passenger goodwill, more ruthlessness sometimes in leaving loads behind. With mails the situation is complicated by considerations of mail contracts and the supervision of G.P.O. staff.

Transport Studies at Oxford

ALL responsible people concerned with transport must welcome the acceptance, which we recorded last week, by the University of Oxford of the offer of the Institute of Transport to endow a readership and research fellowships in the economics and organisation of transport. Further details are given on another page. The whole project, on which the Institute has been engaged for two years, was conceived by that body in the belief that the time was long overdue when the vast problems of transport economics and organisation should receive much greater recognition than hitherto as subjects for university research and teaching in Britain. Providers and users of transport have been becoming increasingly aware of the many problems associated with transport which profoundly affect national prosperity, and which are of great economic and social significance, and call for disinterested study. Those transport organisations and firms which initiated and sponsored the project felt that if a readership in transport, supported by research fellowships, could be established, great benefits would eventually accrue.

Importance of University Teaching and Research

PROVISION at Oxford of the means of research into and teaching of, transport subjects should result in the gradual building up of an authoritative body of knowledge of the complex problems, which will afford a surer foundation to Government and commercial policy than in the past. Besides this, more and better teaching of the subject should appeal to able young men who may be attracted to transport as a career. It was rightly decided by the Institute of Transport that there would be special advantages in securing recognition of the subject of transport at Oxford as one of the two senior universities, as a preliminary to promoting a more lively interest in transport at other universities throughout the country. That is not to underestimate the study and teaching now undertaken in the University of London and elsewhere—though on a small scale compared with what is now to be made possible at Oxford. The number of men, however, qualified to teach, or to undertake research work into, transport is limited. It may well prove hard, at least in the first few years, to find them.

Edinburgh Diesel Suburban Services

THE Scottish capital is not to enjoy the benefits—at least in the foreseeable future—of the electrification now proceeding apace in and around Glasgow. It is fitting, therefore, that the next step in the development of diesel services in the Scottish Region of British Railways should be on an Edinburgh suburban route. Last Monday—a year after introduction of the first diesel trains in Scotland, the Edinburgh-Glasgow inter-city service—diesel sets took over the Corstorphine-Waverley-North Berwick service. The lightweight cars used were built by the Gloucester Carriage & Wagon Co. Ltd. in conjunction with T.I. (Group Services) Limited, and were

described in our issue of July 26, 1957. Some details of the new service and of other Edinburgh suburban diesel services to begin in the near future, are given on another page. A notable feature of these plans is provision of fast and frequent services over the South Suburban circle line of the former North British Railway and over the old Caledonian route between Princes Street and Leith North. The speed and comfort of the new trains should regain, and create, much traffic.

Catering for African Fourth Class Passengers

THE increased prosperity of the African has caused a rise in fourth class passenger travel in Rhodesia; in one recent period of 12 months, a 5 per cent increase of fourth class passenger traffic was recorded. The greater comfort afforded by heat insulation is a feature of coaches now being supplied for this class of passenger. The Rhodesia Railways have ordered from the Gloucester Railway Carriage & Wagon Co. Ltd. 24 fourth class main-line coaches, the first of which has recently been completed. This is part of an order totalling 88 passenger vehicles of various classes. The fourth class coaches are described on another page. They differ externally from the great majority of the existing stock on that railway in their smooth elliptical roofs, compared with the previous clerestory roof with deck light ventilation. Accommodation is in open saloons. The bodies are built on standard Rhodesia Railways underframes, fitted with standard bogies. Attention has been paid to heat insulation in high ambient temperatures. Features of the roof construction include a cellular-type ventilated airspace, and the use of sprayed asbestos as an insulating layer for the inside surface of the exterior roof panels. Extensive use is made of plastic veneered panelling for the coach interior surfaces to facilitate cleaning and to preserve a good appearance over long periods.

Important Indian Gauge Conversion

HITHERTO all traffic from Calcutta and north-eastern India by the 5-ft. 6-in. gauge East Coast line for places on that gauge west and south-west of Madras has had to go via that busy centre and its congested lines and Tondiarpet marshalling yard. To relieve this situation the 52-mile metre-gauge cross link between Gudur, on the East Coast trunk line, and Renigunta, on the broad-gauge Bombay-Madras main line, has now been converted to that gauge. Direct broad-gauge running is thus secured from the East Coast to Renigunta and thence to Arkonam, the junction for the westward line to Bangalore and the south-western lines to Erode (for Trichinopoly), Cochin and the Malabar Coast. The through mileage by 5-ft. 6-in. gauge to Arkonam and the south-west is also reduced by 30 miles. The conversion was effected without interruption to traffic and included the complete rebuilding of the Ralayeru River bridge—14 spans of 50 ft.—and 12 other major and 128 minor bridges.

Fast Diesel Service on "Northern Counties" Line

THE Ulster Transport Authority has lost no time in making good use of the 275-h.p. diesel-hydraulic railcars described in our January 17 issue. There are now four trips each way on weekdays between Belfast York Road and Londonderry Waterside, covering the 92½ miles in either direction in 1 hr. 50 min., though 1 hr. 55 min. is allowed on one of the up journeys. The number of intermediate stops varies between five and six. This affords a much faster service than could be provided with steam haulage. Added to the good service now provided by the Great Northern Railway Board diesels between Belfast and Londonderry via Portadown and Omagh, the U.T.A. service via Ballymena and Coleraine gives Northern Ireland rapid transport between its two chief towns. The route of the former Belfast & Northern Counties Railway followed by the U.T.A. diesels is difficult, and mainly single line. High speeds are necessary to maintain the new schedules.

Further Revision of Regional Boundaries

THE grouping of commercial, operating, and motive power responsibilities under traffic managements is one reason for the alterations to certain boundaries of Regions of British Railways with effect from February 1. Details of the transfers are given on another page. The changes are designed to eliminate the remaining "penetrating lines," whereon the Region whose geographical area was "penetrated" was responsible for all activities—such as civil engineering and commercial matters—except train operation and the provision of motive power. These were carried out by the officers and staff of the Region from which the line stemmed, though the operating and motive power officers were responsible to the General Manager of the geographical Region.

Such lines were a survival from company ownership. Two notable examples, abolished last Saturday, are the Birmingham to Bristol main line of the former Midland Railway, later part of the London Midland & Scottish; and the lines west of Exeter of the former London & South Western, subsequently part of the Southern Railway. On nationalisation, these lines remained in the London Midland and Southern Regions respectively as successors to the L.M.S.R. and S.R., and no division of functions between Regions was involved.

In 1950, however, the then Railway Executive adjusted some Regional boundaries so as to eliminate overlapping of commercial and other responsibilities. It was felt that if all stations, for instance, in one area, on whatever line, were known to be in one Region, this would simplify contacts with traders. It was also thought that this arrangement would result in economies in administration. The two groups of lines already mentioned were accordingly transferred: the Birmingham-Bristol from the London Midland to the Western Region; and the ex-L.S.W. lines west of Exeter from the Southern to the Western Region; but, as stated, operating and motive power remained the functions of officers of the Regions from which the lines had been taken, subject to their responsibility of the General Managers of the new controlling Regions. At that time, while it was desired to make the geographical organisation of the still recently nationalised railways known to the public, there may have been something to say for the changes. From the administrative point of view they caused considerable uncertainty and confusion. The position as to the old Great Central main line, which was divided between several Regions, became very complex indeed. Nor did the change of managements enhance the morale of staffs with a tradition of service to one railway—and still suffering from the psychological effects of a change of allegiance, from railway company to the State, only two years previously. It was argued at the time that the division of responsibility between Regions in the operation of trains was no greater than that which had existed between railway companies on certain routes. Thus it was no worse, according to this point of view, for a Southern Region express from Waterloo to be operated west of Exeter by Southern Region staff over Western Region tracks and calling at Western Region stations to its terminus at Ilfracombe in the same Region, than it had been for a North Eastern Railway train from Leeds to be worked by a N.E.R. engine over the North British from Berwick to Edinburgh. The analogy is not correct, but space does not allow of pursuing the matter here.

Most of the alterations are small, and merely tidying-up. Of the two principal ones, the transfer of the Birmingham-Bristol line is noteworthy. North of Barnt Green, the line is now in the London Midland Region, as is natural. South of the boundary point, the whole former Midland Railway line to Bristol and Bath is in the Western Region for all purposes. This seems to have been a case where commercial considerations were thought to outweigh operating.

Such changes are disturbing, and, therefore, costly in the time and effort of those concerned, apart from their effects on morale. It is satisfactory that the staff concerned are being given the option of transferring, and

that special measures were taken to inform those likely to be implicated. Besides the many changes in organisation that have followed one another in the past decade, this latest change in Regional boundaries must be confusing to a great many people—to the staffs, for instance, of the Chief Civil Engineers concerned. It has been pointed out that they do not themselves affect British Railways' public services—but what is the public of Ilfracombe, say, to think when in due course it sees the brown Western Region totems and so on, replaced by green Southern ones? It is hoped that these changes in the railway map of Britain will result in tangible benefits—and that they will be the last alterations of their kind.

A.T.C. on British Railways

THE official announcement of the adoption as standard for British Railways of an approved form of automatic train control and of the award of contracts for initial supplies of the apparatus should go far to allay public misgivings as to railway safety. Most of the equipment, enough for 2,000 sets of track gear and for 2,000 steam locomotives, is expected to be delivered this year. It is intended to allocate it as follows. (a) To extend the present installation between Kings Cross and Grantham, Eastern Region, which was experimental in the first instance, to York, 83 miles; (b) to equip the London Midland Region main line from Euston to the North as far as Blisworth, 62 miles; and (c) to equip the Scottish Region (formerly North British) main line between Edinburgh and Glasgow, 48 miles.

The serious accident in fog at St. Johns, in the Southern Region, on December 4, 1957, the cause of which was early established to be failure to obey signal indications given by colour-lights, and at Dagenham, Eastern Region, on January 30, naturally directed renewed attention to the general question of automatic train control and the progress being made with the application of the inductively actuated "warning" type equipment. The British Transport Commission some little time ago received the approval of the Minister of Transport & Civil Aviation for this with the intention that it should be extended to selected main routes in accordance with an agreed programme. The Commission has now announced the steps it is taking to implement these plans which necessarily, even for the critical stages, requires the supply of a large amount of apparatus, and a great deal of investigation and testing.

The history of the application of this class of equipment on British railways, apart from experiments leading to no permanent results, was reviewed at length by the Chief Inspecting Officer of Railways, Lt.-Colonel G. R. S. Wilson, in his report dated June 12, 1953, on the double collision of October 8, 1952, at Harrow; in the report he explained the position with which the then Railway Executive was faced on assuming control of the railways on January 1, 1948. There were then two forms of "warning," or "distant signal," types of A.T.C. in regular service on them.

The G.W.R. electro-mechanical contact type, dating from 1906 and originated by some of its officers, had been extended to something over one-third of the total G.W.R. route mileage between the wars.

The London Midland & Scottish and the Southern Railways in 1931 and 1932 had made trials with a magneto-inductive system designed by the late Mr. A. E. Hudd. The S.R. went no further with it, being engaged on considerable extensions of colour-light signalling. The L.M.S.R., however, adopted the apparatus, with some improvements, for its Bow-Shoeburyness line—now part of the Eastern Region—where manning of the fog posts was becoming increasingly difficult. Installation work began in 1937 and final official approval was received in 1947, since when the equipment has been in regular operation.

As a result of the serious collision in fog at Castlecary, on the Glasgow-Edinburgh main line on December 10, 1937, the L.N.E.R. decided to apply the same system to that line, but the war halted the work. Some of the

apparatus intended for it was used for the trials undertaken so as to arrive at a system applicable throughout the nationalised lines, for which it had been resolved to use an inductive link between track and train, as seen on the L.M.S.R. There the warning was initiated, together with a gradual brake application, by a permanent magnet at the approach to every distant signal, but was stopped again almost immediately if the signal was "off" by the influence of an electro-magnet, energised only in those conditions, the short horn blast thus produced serving as a "clear" audible signal. A continuous sounding, which the driver had to silence by an acknowledging plunger, served to denote "caution." The G.W.R. system used a bell signal for "clear" and it was considered preferable to adopt this as standard.

Preliminary tests were conducted by the Railway Executive with various arrangements between Marylebone and Neasden and in due course development work was placed in the hands of a special technical committee, by which time other trials were in progress on the East Coast main line between New Barnet and Huntingdon. On the basis of the experience there gained the British Transport Commission laid before the Minister of Transport proposals for both a five-year and a long term plan. The latter was to cover, inclusive of the former company lines already equipped, nearly 35 per cent of the total route mileage in the country, under certain specified route priorities.

It was, however, considered essential that the proposed equipment should first function for a sufficient length of time with such a degree of reliability that Colonel Wilson could feel justified in advising the Minister to approve it. The trials were extended, therefore, to the up and down main lines between London and Grantham, 105 route-miles, and resulted in various detailed improvements being introduced. Finally the Minister, who had already given a provisional approval, sanctioned the adoption of the equipment, as developed for use on locomotives with the vacuum brake, on November 30, 1956, as explained in Colonel Wilson's annual report for that year, summarised in our issue of December 27, 1957. That adaptations for use with air brakes and other forms of motive power would be required had already been allowed for. It was then announced that the Commission planned to equip 1,300 route-miles and some 10,000 locomotives or other motive power units by the end of 1962.

The track apparatus, while functioning in principle as previously, had been modified to use vertically placed inductors, as this brings certain operating advantages, permanent magnets of specially effective design having been developed in consultation with the industry. This enabled the distance between the two inductors at the same location to be much reduced, which again was of benefit. The locomotive equipment, involving the driver's unit with acknowledging handle, A.T.C. brake valve and air reservoirs, horn, bell, relay, battery, and junction boxes, and receiver for picking up the fields from the inductors has been designed specially to meet the onerous conditions met with on the footplate. There is a reminder indicator, taken from L.M.S.R. practice, which appears immediately the driver silences a warning and remains in view until the next signalling location is reached. In the case of colour-light multiple-aspect signals, which will be seen in ever increasing numbers in the future, the warning will be received at the approach to any aspect except the green, when the bell will ring.

The equipment is thus essentially a cautionary or alerting device, intended to assist drivers in observing signals, and guard against the more serious errors that can arise on the footplate, and it is not claimed that it offers positive protection against mistakes of every kind. No absolute "train stop" effect is provided. To provide that, considerable additional expense would be involved. In main-line working failure to act on an adverse distant indication can result easily in a collision or derailment at high speed, and although there are other sources of accident connected with obedience to signals it has been felt generally that this one more than any other needed providing against.

A paper giving details of the British Railways A.T.C.

system is to be read before the Institution of Railway Signal Engineers on February 12 by Mr. J. H. Currey, who has had charge of the development work. It is hoped to deal with this fully next week, and to illustrate the information given, with some additional details.

Aerial Photography

THE wide use of aerial photography made by British Railways in the preliminary survey of lines for electrification added to the interest of the discussion on a paper entitled "Use of Aerial Photography by Railways," at the Institution of Civil Engineers last Tuesday. The authors of the paper are Mr. N. E. V. Viner-Brady and Mr. H. M. Pearson, both of the Chief Civil Engineer's Department, British Railways, Southern Region. Aerial photography, they point out, is no new development, and surveys based on air photographs are a corollary. A preliminary and up-to-date survey or plan is the basis of all civil engineering projects. To this end aerial surveys have come to be accepted as a quick and completely reliable method of achieving this at a reasonable cost.

Although aerial photographs form the first main stage of aerial surveying, there are a great many other uses for the photographs themselves. They can be used singly or laid together in the form of mosaics to provide a comprehensive view. They may be presented as a straight contact print from the original negative; a stereoscopic pair taken from the original photographs; a gross enlargement to any specific scale usually referred to as "blown up"; an assembly of carefully matched contact prints known as an uncontrolled mosaic; an assembly of controlled mosaics in which the position of fixed ground points is accurately checked by scale measurements on the final mosaic assembly; a "blown up" photograph of a completed mosaic; or as a series of continuous controlled or uncontrolled mosaics mounted in strip form along the line of the railway to a specified scale.

It is now customary in all new aerial survey contracts to provide for the supply of photographs in the form of a straight contact print, and a series of continuous controlled or uncontrolled mosaics, irrespective of any other forms that may be required. In the latter form, the mosaics are presented as an uncontrolled strip mounted on linen in a bound volume. They can prove of inestimable value in discussing the various implications of the work for which the survey is called. The remaining types of presentation must depend upon the need they are to meet.

In uncontrolled mosaics adjacent photographs are fitted together according to identical features on the margins. For the planning of preliminary schemes this procedure is quite suitable and the photographs can be produced cheaply and quickly. It is ideal for outlining new routes or marshalling yards, or work over land outside existing railway property; but as such a mosaic produces a cumulative error, it tends to lose accuracy over any length. Moreover, identical features along the margins of two contiguous photographs are both viewed obliquely from two different camera points. They cannot, therefore, appear precisely the same in each view. As there is a 60 per cent overlap and those who perform this work are very skilful, a high degree of success is obtained.

Scrutiny of aerial photographs for recording site conditions before work is begun can reveal far more than can be shown on a plan. The use of such photographs in the electrification of the Manchester-Crewe line of the London Midland Region was referred to in an article in our issue of September 27, 1957. It is particularly useful to a contractor, and can save him much time otherwise wasted by experienced staff in a walk-over. In railway work over long lengths of line this can prove invaluable. Not only can the contractor's engineer choose suitable access points but he can decide on storage sites, and select various features of vantage in planning the progress of the work.

On the French and German railways a system of periodic aerial inspection is stated to have achieved a high degree of reliability. The lines concerned are flown over

three times a year and the photographs are reproduced to a scale of 1/2,500. These strips are scrutinised by twin stereoscopic inspection simultaneously. The degree of accuracy obtained is stated to be very high. Amongst the features which it is claimed can be traced by this means are track distortion, worn rails, sleeper movement, creep, washy ballast, and even cracked fish-plates. The authors of the paper, however, doubt whether these last can be traced, and have no first-hand evidence of this.

Varying Trends in 1957 Passenger Traffic

(By a correspondent)

FOR the first six months of 1957 the volume of travel on British Railways was estimated at 530.5 million journeys, an increase of 49.4 million over 1956, or fully 10 per cent. The substantial rise was due partly to the shortage of fuel oil, which hampered road transport until the middle of May; but without that fortuitous help the railways carried 10 million more passengers in the month of June. That increase of 13 per cent was exceeded in July, when the number of passengers reached a peak of 104.4 million, 16 per cent over 1956; but August bookings totalling 100.3 million were higher by only 6 million, or 6 per cent. In both July and August more tickets of all descriptions were issued. In July the average fare was 39.4d. and total passenger takings were up 13 per cent; in August the average fare was 37.3d. and takings up 5.7 per cent.

The September return of passenger journeys showed the first signs of change in the general upward tendency. The total number of passengers was given as 103,916,000, an increase of 7,285,000, or 7.5 per cent. That was entirely due to an abnormal number of 44,181,000 season ticket journeys, computed on the basis of 600 journeys a year for the full period covered by each ticket; the resultant increase on 1956 was 7,451,000, or 20.3 per cent. There was a rise of 17,000 in the number of ordinary tickets, offset by a decrease of 183,000 in early morning tickets. Significantly the average fare in September dropped to 27.7d., but takings were up 5.3 per cent.

October brought a decisive change in the trend of passenger travel. The number of passengers in the month was 79,941,000, a decrease of 3,037,000 from 1956, or 3.7 per cent. Journeys at full fares were 123,000 fewer, a fall of 0.5 per cent. Issues of return tickets in the London Transport area dropped by 613,000, or 26.8 per cent, and 1,799,000 fewer early morning tickets were sold, a decrease of 14.4 per cent. Season ticket journeys were down 1,552,000, or 6.3 per cent. The solitary increase was one of 5.1 per cent in other bookings below the standard full fare. Passenger takings were only £151,000, or 1.5 per cent, over 1956 and it appeared that passenger business would not expand in the last quarter of the year to compensate for the loss of freight tonnage. Details for November and December are not available, but it is known that passenger revenue for the four weeks to December 29 was £647,000 less than in 1956, a decrease of 6.3 per cent. Such a disappointing close to 1957 left little satisfaction in knowing that in 10 months to October 920,536,000 passengers travelled, 75,660,000, or 9 per cent, more than in 1956, and added £11,484,000 to railway passenger revenue. The number of first class passengers included in the aggregate was 19,949,000, an increase of 2,621,000, or 15 per cent; they paid £1,844,000 more than the 1956 revenue from first class travel.

Last year the placing in service of diesel multiple-unit trains went on apace. Expanding traffic and receipts on various sections of line were reported as soon as these vehicles were introduced, but nothing was said about the net revenue earned. The cost of these vehicles is high, and the cost of training staff to handle them is considerable. Money has also to be spent freely on facilities for servicing the diesel fleet. Yet on December 1, out of a total stock of 1,275 passenger carriages, 135 were unserviceable. Unless this under-repair percentage of 10.5 is reduced speedily, the success of the experiment with this type of diesel traction may be jeopardised.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Suburban Electric Stock

January 18

SIR,—I refer to Mr. J. E. Lake's letter, published in your issue of January 17. Two rows of seats, or a compartment, occupy 6 ft. of body length in the Southern Region stock; were seats to face the same way, as in buses, aircraft, and some British Railways diesel cars, equal comfort, with adequate leg-room, could be provided at a seat pitch of only 2 ft. 6 in. This would enable two 4 ft.-clear-opening doors (as in Eastern Region stock) to be provided without any loss of seating, in each of the eight "open" cars of a 10-car train, and only 28 seats would be lost, compared with the existing trains, which include two coaches of eight compartments.

Against this, comfortable standing room would actually be increased, and seated passengers would not constantly be having their feet trodden on, legs kicked, and so on, by those attempting to enter or alight, or have standing passengers falling against them.

Yours faithfully,

JOHN RODGERS

132, Worrin Road, Shenfield, Essex

Combating Winter Weather

January 21

SIR,—In your January 17 issue you quote "The Man on the Line" in the January issue of *British Railways Magazine* in the effect that lavish organisation and equipment cannot be provided because of the infrequent occurrence of the very worst conditions and you say: "It would probably be found, he rightly points out, that in five years out of six the equipment would be lying idle."

Exactly. So in the years when the conditions are bad there is no equipment to deal with them resulting in untold chaos to the railways and industry. Well, maybe not "untold," for the record is available for the years 1940-41-42 and 1947. It might pay the railways to re-study what happened in those years.

It has been stated that this is the only country in Europe which does not prepare for winter. How true!

Yours faithfully,

G. RICHARD PARKES

The Thorns, Park Road, Hadfield, Manchester

["Chaos" is a strong word. The cost of the dislocation occasioned by comparatively rare extreme winter weather must be weighed against the capital cost of providing equipment that needs to be used only rarely. Of countries served by a major railway system, Britain has the mildest climate in Europe.—ED., R.G.]

A.C. Traction Motors

January 14

SIR,—Since it was decided to adopt the 50-cycle system of traction for our railways, I have been watching for signs that either the railway engineers themselves or the manufacturers would show some interest in the a.c. motor, as distinct from the d.c. motor using rectified current; but no signs seem to be forthcoming.

On motor coaches the heavy axle-hung d.c. motor should be discarded as soon as a suitable a.c. motor is developed, even if the a.c. motor is axle-hung; as it is lighter than the d.c. motor for a given service, less damage to the track would result.

One thing that always strikes me when I visit a running shed where electric motor coaches are serviced, is the dirty mess caused by motor gear cases and axle caps, especially if the suspension bearings are oil lubricated. How much better if there were no gears and no axle suspension bearings. For motor coaches operating up to speeds of

90 m.p.h. gearless motor drives are perfectly feasible both technically and economically if a.c. motors are used. Without any stepping up of armature speed by means of gears, a large-diameter armature will be required. With wheels of, say, 50 in. an armature of 32 in. dia. is possible. This ratio of armature dia. to wheel dia. is only possible with the low-voltage a.c. motor.

With the ratio given above no hollow quill is possible and the axle is the actual armature shaft, the motor bearings being the axle bearings. For quietness and easy riding the wheels would have to be of the resilient type. I have been intimately connected with the development of the resilient wheel; and 40 vehicles fitted with them have built up an impressive mileage covering 16 years in this country. Alternatively, a quill could be used; this would reduce the maximum armature dia. to 30 in. The attachment of the quill to the wheels would be simplified by using a resilient wheel type of wheel centre.

A 30-in. armature even running at road wheel speed is more than sufficient with four motors and a train of four coaches to give the performances which are now being demanded.

Without the rectifiers, coolers, and smoothing chokes, the control gear is much simplified; so it is imperative that the a.c. motor be brought more into the picture before the lag, in this country, of technical achievements gets bigger.

Yours faithfully,

HERBERT CHARNLEY

Brook House, Clayton-le-Woods,
Nr. Chorley, Lancs.

Railway Connection with London Airport

January 21

SIR,—Assuming the distance between central London and London Airport to be about 16 miles, if the average speed of travel between the two is 45 m.p.h., the journey will take 21 min.; if the speed averages 75 m.p.h., journey time will be 13 min. From this it seems that a journey time of about 20 min. (average speed 48 m.p.h.) is reasonable, and that any shortening below this figure is hardly economic in view of the trivial saving.

Sixteen miles in 20 min. is well within the capacity of a standard electric train. A conventional railway would avoid costly specialised equipment and provide a connection with the main railway system for through freight (including fuel oil) services and passenger services for destinations other than those to the chosen terminal as required.

All the London proposals for connections with London Airport are costly because they envisage special trains carrying only air passengers. It would be better to run an interval electric service to places farther afield, with the airport as first stop (out) and last stop (in). Trains from Windsor to London via Staines could be diverted by a new route via the airport. There would be room on the trains for both ordinary and air passengers, but to prevent crowding at the peak periods coaches for airport only could be added or detached from the ordinary trains.

"Travel by rail and sea" has become a British Railways slogan. There should be also a combination of rail and air. Southend and Ostend are already connected to their respective capitals by electric trains and to each other by an air service. Why not advertise a rail-air-rail route, the only condition being pre-booking for the air section? If London-Lydd train services were improved a rail-air-rail route to Paris would be possible. Before the war the railways initiated some useful ancillary air services, and for many years New Zealand Railways have run a successful rail-air freight service.

Yours faithfully,

R. G. R. CALVERT

45, Woodway, Oxhey, Watford

THE SCRAP HEAP

Ulster Rack Railway

A rack-and-pinion railway up to the market town of Rathfriland, on a high hill in County Down, was considered in 1858 by Robert Haire, who was then engaged on the building of the Banbridge Junction Railway between Scarva and Banbridge, and planned to link this line with Rathfriland. Haire had been in correspondence with Silvester Marsh, an American engineer who had devised an improvement to the rack-and-pinion system. He proposed to build a railway with a centre rack rail from Ballyronney up to a terminus near the east side of the market square in Rathfriland. The local population favoured the project, but it seems to have been abandoned through apathy on the part of its promoters. The standard railway (later, part of the Great Northern) was built to Ballyronney in 1877-80 and extended to Castlewellsan in 1906. The rack line to Rathfriland, though planned and re-planned, never materialised. All the G.N.R. lines centring on Banbridge have now been closed, and most of the track has been lifted.

Last Dutch Steam Locomotive

We are indebted to Dr. F. F. de Bruyn, Director of the Netherlands Railways Museum at Utrecht, for the photographs reproduced below. The left-hand illustration shows the last steam-hauled train on the Netherlands Railways after it had entered the museum on its last journey on January 7. The 4-6-0 locomotive now being preserved is one of a class of four-cylinder 4-6-0s designed and largely built by Beyer, Peacock & Co. Ltd.; this particular engine, No. 3737, was built

by Werkspoor in 1911. On the right of the picture is the tender of a Beyer, Peacock 2-4-0 built in 1864. The museum contains another 2-4-0 by the same builders, with 7-ft. driving wheels, built in 1881, one of 179 owned by the Netherlands State Railways in 1880-95.

In the right-hand illustration Dr. F. Q. den Hollander, President of the Netherlands Railways, is speaking after presenting to Dr. de Bruyn a facsimile of No. 3737; the actual locomotive had to go first to shops for preservation treatment before taking its place in the museum.

Too Many London Travel Facilities

Presiding at the half-yearly meeting of the Metropolitan Railway Company, Sir Charles McLaren said that for the time being the supply of travelling facilities in and about London had outrun the demand. When a shareholder commented on the modest dividend, the Chairman said the directors would be glad to double the fares if the public would pay, but if they went beyond a certain point people would leave the railway altogether.—From *"The Evening News,"* January 30, 1908.

First Railway Act of Parliament

The first railway to be sanctioned by Parliament was the line between Leeds and Middleton, which was authorised by an Act of June 9, 1758, granted to Charles Brandling, Lord of the Manor of Middleton. The act is described officially as: "An Act for establishing Agreements made between Charles Brandling, Esquire, and other Persons, Proprietors of Lands, for laying down a Waggon Way, in order for the better supplying the town and neighbourhood of Leeds, in the County of York, with

Coals. 31 George II, cap. 22. Royal Assent, June 9, 1758."

A steam locomotive built by Matthew Murray was introduced on August 12, 1812, and was the first engine with flanged wheels for railway work to be used commercially. At that time, the Middleton Railway was laid with John Blenkinsop's rack rail. A wheel and section of rack rail still extant accord with the original arrangements of 1812, and may well be genuine relics although there is some possibility that the wheel, which looks remarkably fresh and unworn, may be a spare, or a later casting from the original pattern. The pattern of a cogwheel of another Blenkinsop locomotive was discovered on Tyneside about 30 years ago, and castings were made from it.

Rails in the Vineyards

The Moselbahn is one of Europe's friendliest and most famous railway lines. To use it means travelling by the so-called "Tiplers' Express"—the journey takes four hours and runs through one of the loveliest and best known of Germany's wine-growing districts. This stretch of the middle Mosel contains every single one of the vineyards which have made the river famous in wine history.

In its heyday the train would set down travellers between stations, halt to let them admire the view, or use its steam whistles to recall passengers from the famous *weinstube*, or wine restaurants, along its rambling route, which often runs directly beside the main road. Competitive commercialism and a growing bank overdraft has made its behaviour more orthodox.—From *"The Manchester Guardian."*



The last steam-hauled train of the Netherlands Railways after entering the museum at Utrecht; the engine is a 4-6-0 built in 1911



Dr. F. Q. den Hollander at the presentation of the facsimile of the locomotive to the museum

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

West Coast Port

A port on the West coast to serve the Federation of Rhodesia & Nyasaland was referred to recently by the Mayor of Bulawayo, Councillor J. S. McNeillie. "We should not forget," he said, "Rhodes' statement to Leo Weinthal in 1894 that Rhodesia will have to be opened up by rail to the sea from all its frontiers, including the western one. This is still to come, and I am confident that circumstance and progress will make it not only desirable but, in fact, essential."

A railway to the West coast has been under consideration for some time.

Mechanised Accounting

The first Hollerith 550 electronic calculating machine installed in the Rhodesia Railways Hollerith Bureau in Bulawayo under the control of the Chief Accounts & Finance Officer is reported to be operating satisfactorily.

Divided into two parts, one unit feeds and reads punched cards, while the other, which is entirely electronic with no moving parts, receives the information and produces the answers.

Six thousand cards can pass through the first machine in an hour, while the electronic unit, working with its system of valves, makes calculations at the rate of 14,000 per sec. irrespective of the complexity of the calculation. The answers are either reproduced on the original card or on a new card as required.

The punched cards are fed mechanically into the machine which reads them into storage units and registers; this information is then taken to the calcu-

lating unit in accordance with a pre-arranged programme.

The Stores Department has about 40,000 different items in stock in 21 different locations and in five centres as far apart as Broken Hill and Umtali.

The first task of the new machine installed will be to keep a stores ledger showing all issues and receipts, at the same time extending the value of the transactions at average prices which it works out. The average prices will be up to date day by day. Apart from this aspect, the stores ledger shows the balances in the various locations and an overall balance for which the price is again checked.

Until now prices have had to be averaged manually and based on the stockholding for the previous month. When using the old machine it took 100 hr. monthly to do that part of the work allocated to it; with the new machine, including the averaging of prices, all these functions will be performed in about 6 hr.

Apart from Stores Department work the new machine will be used to compute certain revenue statistics and the depreciation of fixed assets, while at a later date it might be used for operating statistics.

SOUTH AFRICA

Out-of-Gauge Load

Two cement kilns 55 ft. 11 in. and 49 ft. 7 in. long by 10 ft. 7 in., and weighing a total of 100 tons, were recently carried over four 3-ft. 6-in. gauge systems, the South African, Rhodesia, Mozambique, and Nyasaland Railways, from Vereeniging, in the

Transvaal, through Salisbury to Blantyre, Nyasaland, 1,936 miles. Two S.A.R. type S.14 wagons were specially converted for the trip, and the loading was supervised by representatives of the Mechanical Department of the S.A.R.

The longer route via Westleigh-Orkney, Fourteen Streams-Mafeking was used to avoid the Reef electrified section where it would have been impossible to handle the load with its abnormal dimensions.

The journey was completed in three weeks but only daylight transit was allowed. From Bulawayo onwards, tracks alongside station platforms had to be avoided.

The kilns were carried on the two wagons as two-point loads which rested on timber supports as near to the bogie centres as possible. The timber packings extended the full length of the wagons. To prevent movement of this packing, suitable angle sections were bolted to the underside of the packing, bearing hard up against the sides of the wagons.

Timber chocks were fixed to the packing to prevent side movements.

Accident at Niekerkshek

A driver and fireman and a passenger were killed when a passenger train was derailed near Niekerkshek, some 200 miles east of Cape Town on January 20. The engine and two carriages of the train, en route to Port Elizabeth, left the rails. Twelve passengers were injured.

BELGIAN CONGO

Matadi-Léopoldville Railway

Traffic over the 3-ft. 6-in. Matadi-Léopoldville line of O.T.R.A.C.O. (Office d'Exploitation des Transports Coloniaux) is reported to be increasing steadily; this is the case with up (from Matadi inland), down, and local traffic. Rolling stock recently delivered includes air-conditioned railcars equipped with refreshment bars, and a number of privately-owned cistern wagons.

MOZAMBIQUE

Improved Port Facilities

Port and railways facilities are to be expanded at Beira and Lourenço Marques. One object is to cater for traffic by rail to and from Rhodesia. The improved facilities are to include two new shipping berths at Beira, to be ready early in 1960.

IRAQ

New Rolling Stock

Fourteen steel third-class coaches, built by Ferrostaal A. G. of Düsseldorf, recently arrived in Iraq, and are

Lightweight Stock in the Belgian Congo



Lightweight stainless steel coaches built by La Brugeoise et Nivelles S.A. for the 3-ft. 6-in. gauge Bas Congo—Katanga Railway

in service on the Baghdad-Basrah and Baghdad-Kirkuk lines of the Iraqi State Railways.

They are 60 ft. over bodies and 7 ft. 3 in. wide and are the widest in use on the metre gauge section. The roofs are double to provide protection against the heat. The interiors are of open type with two rows of double seats and a central aisle, the coaches being equally divided into two compartments each seating 44 passengers giving a total of 88 per coach. Two toilets are centrally placed and the entrance doors are in the centre of each compartment, all opening inwards for passengers safety.

Heat resisting glass is fitted to all windows. Entrance door lights are provided, which automatically switch on at stations and halts. The all-steel bodies are built integral with the underframes, and the bogies are of a new design with helical bolster springs and hydraulic dampers. Roller bearing axleboxes are fitted and the coaches are finished in the new Iraqi State Railways colours of green and light cream, with all lettering and numerals in stainless steel.

AUSTRALIA

North/South Transcontinental Line

The Commonwealth Government is reported to desire to extend the 4-ft. 8½-in. gauge line northwards from Marree to Alice Springs, and eventually to build a new standard-gauge link to connect with the North Australia Railway at Birdum. To give through running from Port Pirie, in South Australia, to Darwin, it will be necessary to connect the 3-ft. 6-in. gauge N.A.R.

VICTORIA

New Saloon-type Passenger Cars

The Victorian Railway now have five of their air-conditioned saloon-type passenger cars in service on the "Daylight" and "Spirit of Progress" on

the Melbourne-Albury run, and "Mildura Sunlight." The construction programme provides for 26 of these modern cars to be built at Newport Workshops.

Regarded as Victorian Railways country passenger car of the future, the saloon-type carriages will replace progressively the "Spirit of Progress" compartment type carriage; for many years a feature of the Department's country rolling stock. Ultimately, they will be the standard saloon car for all inter-state and important country passenger trains.

The only carriage partition is of glass, separating the smoking from the non-smoking section. Wood veneer panelling for the internal finish of the earlier cars has been replaced by laminated plastic. The cars are of all-steel construction, and well insulated against heat, cold, and noise. Heating elements have a total capacity of 8,500 W. For cooling in summer, there is a refrigerator in each car with a capacity of seven tons. The entire air in the car is changed every 3 min. Body and underframe of the carriages are the skin type integral unit. Foam-rubbered upholstered seats are adjustable and reversible, with footrests. Other features of the new car are wide landscape windows, a public address system, chilled drinking water, and card tables.

CANADA

Telex from Coast to Coast

A Telex service, operated by the Canadian National and Canadian Pacific Telegraph Companies, is now operating from Nova Scotia to British Columbia.

ARGENTINA

Strike Over Arrest of Signalman

As a result of the accident at Caseros on January 10, the police arrested the signalman involved. As he was not released after questioning, the signalmen in the Alianza section

decided to stage partial strikes, which completely disorganised the services. The two railwaymen's unions are also threatening a series of nation-wide stoppages, to boost their requests for increases in payments to superannuated staff.

Purchase of Polish Coal

The State Railways have purchased 600,000 tons of coal from Poland, shipments of which will begin immediately. The principal supplier is the firm of Weglokoks.

Buenos Aires Underground

Work is reported to have begun on the excavation for the new Buenos Aires underground railway from Plaza Mayo to San José.

UNITED STATES

Monorail for Detroit

To relieve congestion in the city of Detroit, a monorail system of transport is proposed. A plan is being put before the city council by the Detroit Rapid Transport Commission for a 54-mile system within city limits, with a possible later extension by 90 miles to serve outer suburbs such as Pontiac and Ypsilanti. The 54-mile system would have 88 stations and 34 adjacent car parks.

The type of monorail favoured is one in which the track is supported by inverted L-shaped uprights positioned at street kerbs, with the undersides of the suspended cars moving at about 15 ft. above street level. The designs of cars and structures have not been fully worked out, but similar proposals for the cities of San Francisco and Dallas have been studied. The Dallas type, of which a full size version has been on exhibition in a fair-ground at that city, is the one favoured, with what is known as a "split rail" system of suspension.

The total cost of the initial 54-mile system, including rolling stock and all other equipment, is estimated at \$256,000,000.

Publications Received

Electric Train Services for the Eastern Railway.—The Public Relations Department of the Eastern Railway of India has produced an illustrated booklet giving details of the Howrah-Mughalsarai electrification project as a whole and of the first stage now completed by inauguration of electric working between Howrah and Sheoraphuli on December 14, 1957 (see our December 20 issue). Emphasis is on the Calcutta suburban transport problem and the advantages to be gained from the work now in hand at 3,000 V. d.c. from Howrah to Burdwan. With a minimum of technical language, the book conveys an adequate idea of the varied aspects of an electrification scheme, from the distribution of power

to the railway substations and its conversion in mercury-arc rectifiers, to the overhead contact system and the locomotives and multiple-unit trains themselves. Civil engineering and signalling work are also dealt with briefly. By promoting interest in railway electrification and by spreading knowledge among the public of all that that involves, the booklet should promote good relations with railway users throughout the development of the scheme.

Densopol.—A booklet has been issued by Winn & Coales Limited, Denso House, Chapel Road, London, S.E.27, describing the specification and applications of Densopol tape. This product has a plastic characteristic and is supplied in three different grades of p.v.c. backing.

Cut your Machining Costs by Using Precision Castings.—A leaflet, No. 530, published by Hadfields Limited, East Helca Works, Sheffield, describes the advantages of the special foundry techniques which it uses to ensure accurate castings. Processes include investment castings and shell moulding. It also mentions the wide range of materials in which castings can be produced, and gives representative examples of some products and their composition.

Newage, Manchester.—This booklet, obtainable from the company, describes the activities of Newage (Manchester) Limited, in the conversion of automotive engines for industrial purposes. It also gives the background history of the company, and details the range of engines which are available.

Further Adjustment of British Railways Regional Boundaries



Boundaries of the Regions of British Railways as altered on February 1, 1958. The figures refer to alterations mentioned in the article on the opposite page

Further Adjustments of British Railways Regional Boundaries

Elimination of "penetrating lines" and transfers of certain installations

SOME further adjustments in the boundaries between the Regions of British Railways, which have eliminated the remainder of the "penetrating lines," came into effect on February 1. The changes do not of themselves affect the railways' public services in any way.

In 1950, railway Regional boundaries were adjusted to eliminate overlapping in certain areas of Regional commercial interests with a view to simplifying contacts between the railways and their customers, and to achieving economies. This was accomplished by adopting geographical areas for the railway Regions, and transferring a number of lines from one Region to another for all purposes except traffic operating. To avoid a break in operating and motive power continuity, the operating and motive power departments of the Region previously responsible for these lines continued to operate them; but they became responsible for such operation to the Chief Regional Manager of the geographical Region into which the lines penetrated. Such lines became known as "penetrating lines."

The adjustments effective from last Saturday eliminate the penetrating lines, which are now absorbed by one specific Region for all purposes.

Staff Consulted

Staff concerned in the changes, which have been fully discussed with the railway trade unions, have the option of transferring to the Region which now becomes responsible for their station or depot, or remaining a member of the staff of their former Region. Special measures were taken to inform all staff who were likely to be in any way concerned.

Boundary Changes

The accompanying list shows Regional boundary adjustments which result from the absorption or transfer of penetrating lines. It does not include those yet to be decided in the Birmingham-Wolverhampton area of the London Midland and Western Regions. The alterations are classified in groups, numbered 1 to 23. These numbers are shown in the map on the opposite page.

Besides those shown, there are certain boundary definitions of colliery branches, as between the Eastern and L.M. Regions.

Island Depots

The following transfers of depots have been made:—

1. Carlisle Kingmoor Motive Power Depot transferred to L.M. Region for all purposes
2. Chester Running & Maintenance Depot is now L.M. Region for all purposes
3. Bromsgrove Wagon Repair Depot has been taken over by L.M. Region for all purposes
4. Wrexham Wagon Repair Depot has been taken over by Western Region

	New boundary point	Remarks
<i>Western to Southern Region (lines west of Exeter)</i>		
1. Barnstaple	Barnstaple Victoria Road distant signal from Swimbridge	Barnstaple Victoria Road transferred to Southern Region
2. Bodmin	Boscarn Junction from W.R. distant signal	Bodmin North Station reverts to S.R.
3. Launceston	Launceston from W.R. distant signal	Launceston Station transferred entirely to S.R., except for Motive Power Depot which will remain W.R.
4. Plymouth	Devonport Junction from S.R. distant signal	Former Southern Railway lines in Plymouth Friary, Cattewater, and Turnchapel area remain in W.R.; S.R. has use of Friary M.P. Shed so long as steam working remains in operation and W.R. steam engines use this depot as necessary
5. Exeter	Exeter Central "B" from W.R. distant signal Cowley Bridge Junction from S.R. distant signal	—
<i>Western to Southern Region (other lines)</i>		
6. Chard Junction—Thornfalcon	Marker light 892 yd. from Chard Junction branch ground frame	Chard Town Goods and Chard Central stations transferred to W.R.
7. Somerset & Dorset line, Templecombe	On Bournemouth line—Templecombe Junction distant signal from Henstridge; on line between Templecombe Junction and Station—Templecombe S.R. down branch distant on down line and Templecombe S.R. up branch advanced starter on up line	Templecombe passenger station remains S.R.; former S. & D. yard and M.P. D. transferred to W.R.
8. Grafton—Andover	0½ mile post, 616 yd. from Red Post Junction down branch distant signal and 476 yd. from Weyhill up distant signal	—
<i>Eastern to North Eastern Region</i>		
9. Barnsley Court House—Monk Bretton	Mile post 177½, immediately south of Oaks Viaduct	—
10. Stairfoot—Cudworth Goods	Mile post 55, ¼ mile north of Stairfoot Junction up distant signal	—
11. Wombwell West—Cudworth	Mile post 174, north end of Ardsley Tunnel	—
12. Haxey Junction—Marshland Junction	12 m. 42 ch. from Marshland Junction	—
<i>North Eastern to Eastern Region</i>		
13. Grimethorpe—Houghton Colliery branch from Stairfoot	Mile post 2½, immediately on Stairfoot side of bridge carrying branch over Midland main line	—
14. Darfield—Cudworth	Mile post 172½, north of Dearne Valley Colliery Sidings box, south of Houghton Colliery Sidings box	—
<i>Western to London Midland Region</i>		
15. Roman Bridge—Blaenau Festiniog North	Between North and Central Stations	—
16. Birmingham—Bristol: Barnt Green (inclusive) to Birmingham including the Halesowen joint line	Barnt Green up distant signals from both Blackwall and Alvechurch, inclusive to L.M.R. Halesowen W.R. down distant signal exclusive to L.M.R.	—
17. Marylebone—Northolt Junction and Harrow South	Northolt East Junction down distant signal inclusive to W.R.	Marylebone C.M. & E.E. Electrical Repair Shop transferred to Eastern Region
<i>Western to Eastern Region</i>		
18. Marylebone—Northolt Junction and Harrow South	—	—
<i>Eastern to London Midland Region</i>		
19. Luffenham—Ketton & Collyweston	Ketton & Collyweston down distant signal to Peterborough (inclusive to E.R.)	—
20. Daybrook—Gedling	Eastern portal of Mapperley tunnel (inclusive to L.M.R.)	—
<i>London Midland to Eastern Region</i>		
21. Upper Holloway—Crouch Hill	West face of bridge No. 10	—
22. Woodhead—Dunford Bridge	Point immediately outside eastern portal of Woodhead Tunnel	—
<i>London Midland to North Eastern Region</i>		
23. Diggle—Marsden	North end of Diggle up south platform	Chief Civil Engineer, N.E.R. maintains Standedge Tunnel; water troughs at the south end of the tunnel are the responsibility of the C.M. & E.E., L.M.R.

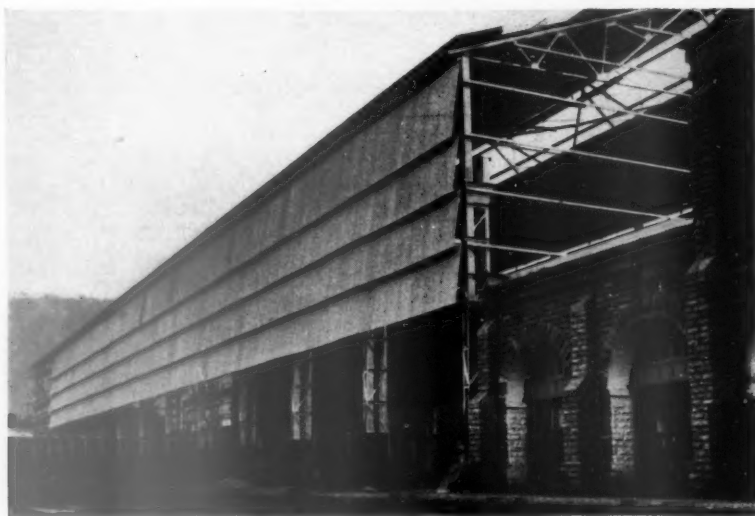
Definitions and revised definitions of boundaries not involving transfer between Regions

Boundary

<i>Eastern to London Midland Region</i>	
Kings Cross—St. Pancras	St. Pancras North London Junction home signal from Kings Cross Goods & Mineral Junction
Hackney—Stratford	Victoria Park home signal from Stratford
Old Ford—West Ham	Bromley Junction down branch home signal from Tilbury Junction
Mill Hill (Hale)—Mill Hill East	End of electric track west of Mill Hill East
Hill End—Smallford	Mile post 21½, east of Hill End Station
Holwell—Wycombe Junction	Mile post 4½, west of point where line crosses Hose Tunnel

Remodelling of Ajmer Workshops—2*

Western Railway of India carriage and wagon repair facilities increased by 50 per cent



Carriage and wagon stripping shop

RE-GROUPING in 1951, considerably increased the metre-gauge stock of both carriages and wagons on the Western Railway to the extent that it is necessary to almost double the repair capacity of the carriage and wagon workshops at Ajmer. It was decided to undertake the construction of metre-gauge air-condition stock, and special coaches. The developments envisaged will, it is estimated, cost Rs. 108 lakhs, and when completed, will, with the additional capacity to be provided at Rajkot and Junagadh, be sufficient to deal with all repairs, and also cater for any developments as a result of the Five Year Plans.

To give an indication of the additional repairs capacity required, before re-grouping, the number of carriages and wagons on the former B.B.C.I.R. was 1,274 and 9,323 respectively. By the merging of the metre-gauge lines of the Saurashtra Railways, representing a fusion of five state railways, and the Rajasthan and Jaipur State lines, the number of carriages and wagons on the Western Railway has risen to 2,158 and 14,715 respectively; there was also a backlog of repairs, because of intensive use during the war years. It will therefore be realised that a review of the repair capacity at Ajmer was a matter of extreme urgency. Furthermore, there were also considerable developments during the First Five-Year Plan, during which the rehabilitation of rolling stock received the utmost consideration.

Concurrent with the developments at the Ajmer workshops, as more metre-gauge repair capacity is still required, it was decided to build a new workshop at Rajkot for locomotive and carriage

repairs at an approximate cost of Rs. 4 crores, while the additional wagon repair capacity will be obtained by developing the Junagadh workshops at a cost of Rs. 11 lakhs.

Broad-gauge Repair Facilities

At the same time broad-gauge repair facilities are also very considerably expanded. The carriage repair shops in Bombay are being remodelled at a cost of Rs. 32 lakhs, and the wagon repair shops at Mahalakshmi are being converted to deal with broad-gauge coaching stock, as these shops are not capable of expansion for wagon repairs. The wagon repair capacity being lost by the

changeover will be more than made up by producing a new wagon repair works at Kotah of a cost of Rs. 2.6 crores. The eventual output planned is 40 periodic overhauls a day in terms of four-wheel vehicles.

Reasons for Remodelling at Ajmer

Several factors contributed to the need for increasing the capacity of the Ajmer carriage and wagon workshops. The considerable increase in the number of carriages and wagons resulting from re-grouping, the limited repair capacity of the former metre-gauge state lines available to the Western Railway, because of their inability to obtain capital equipment during the war years, the backlog in repairs because of intensive use, and the anticipated developments during the First and Second Five-Year Plans.

Increased Output

On completion of the Ajmer remodelling, the works will have capacity sufficient to turn out 2,100 unit periodic overhauls and 3,600 unit periodic overhauls to carriages and wagons respectively annually; there will also be sufficient capacity to build metre-gauge air-conditioned stock, and special coaches.

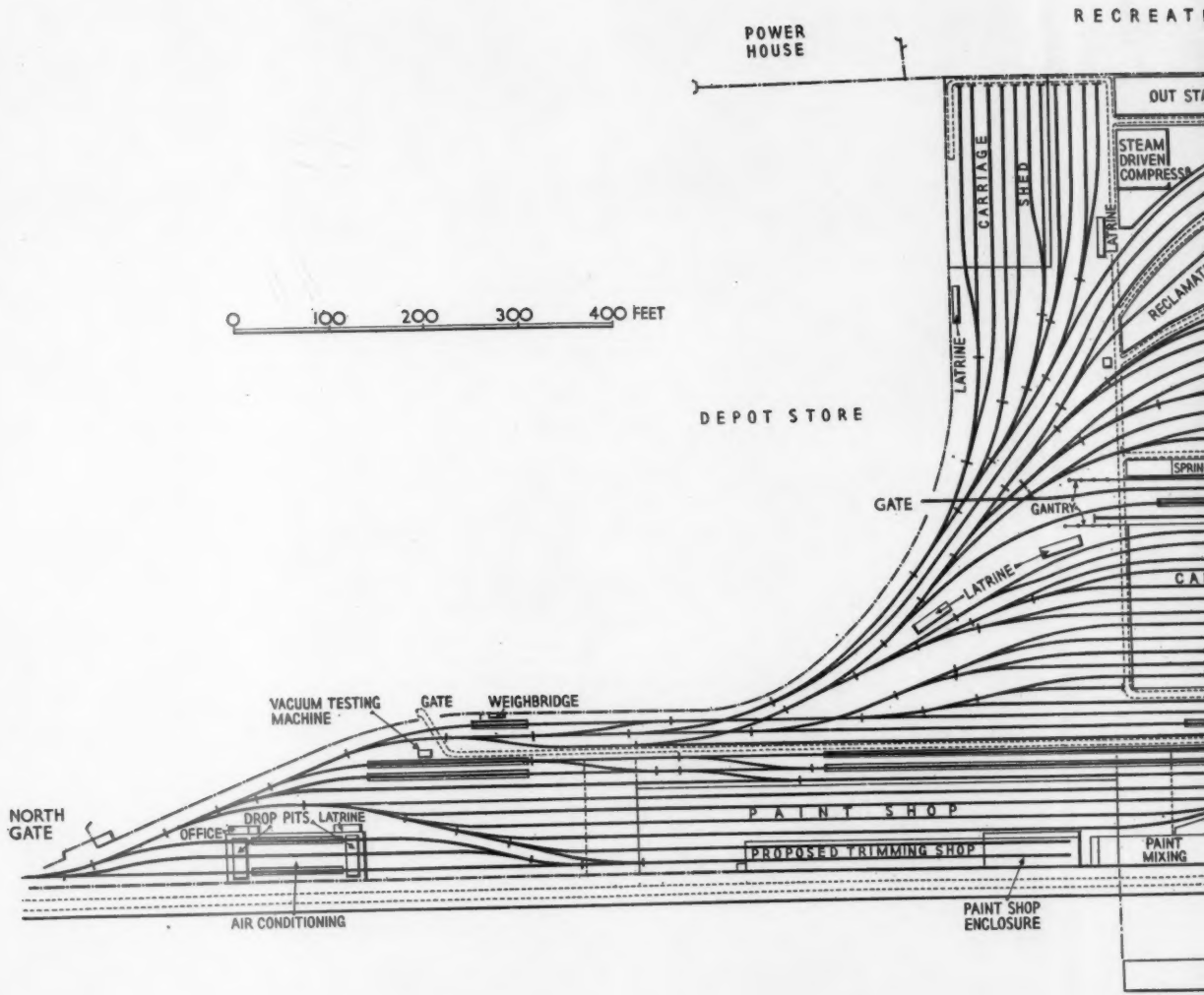
It has been calculated, moreover, that these developments will be sufficient to meet demands likely to arise as a result of the Second Five-Year Plan as far as can be seen at the moment, in so far as the metre-gauge developments are concerned.

Steps have been taken to introduce on a comprehensive scale, mechanical handling, by installing mobile trucks for internal transport. This in itself entails considerable work as the rails

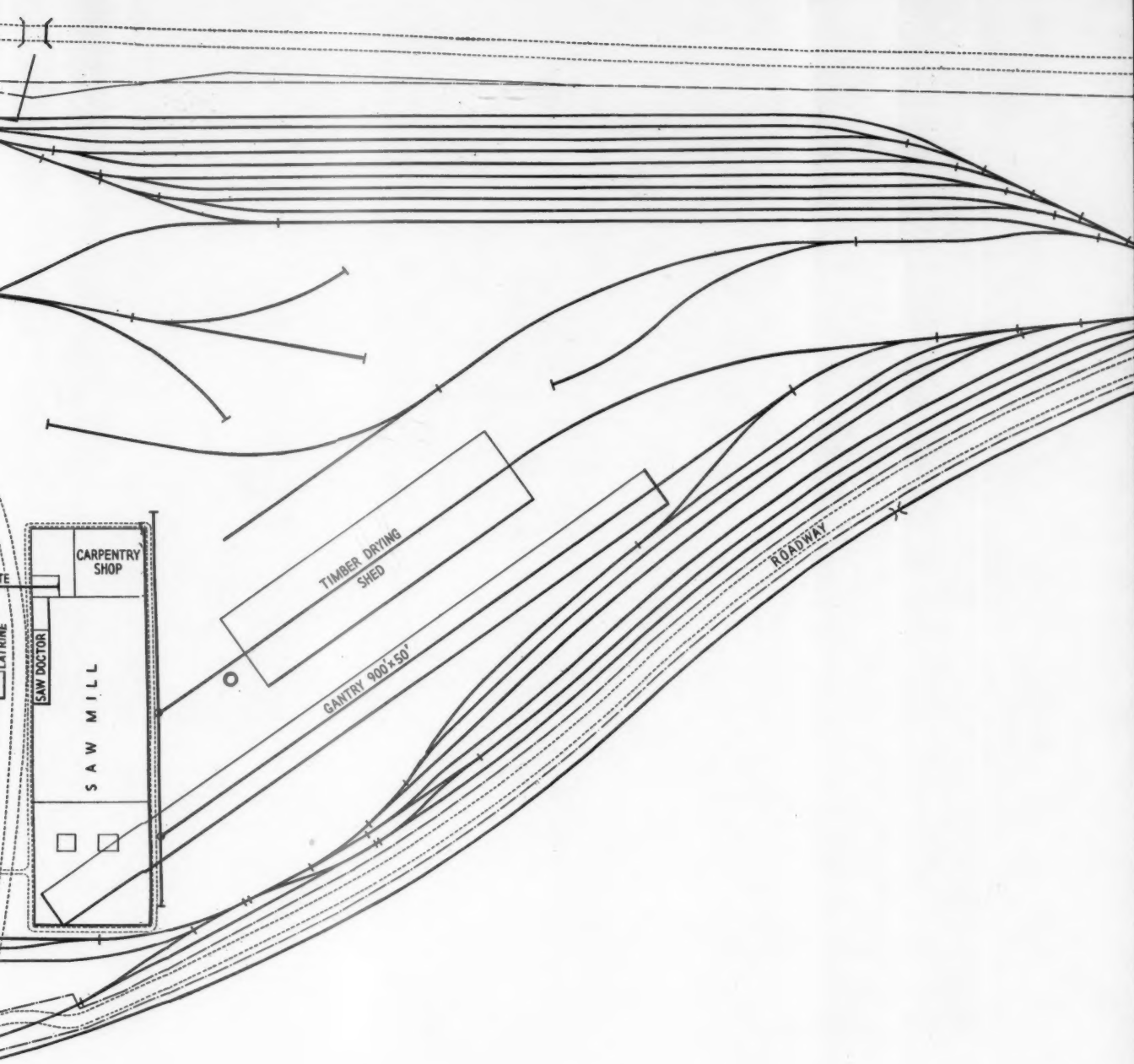


New wheel shop under construction, looking north, towards offices

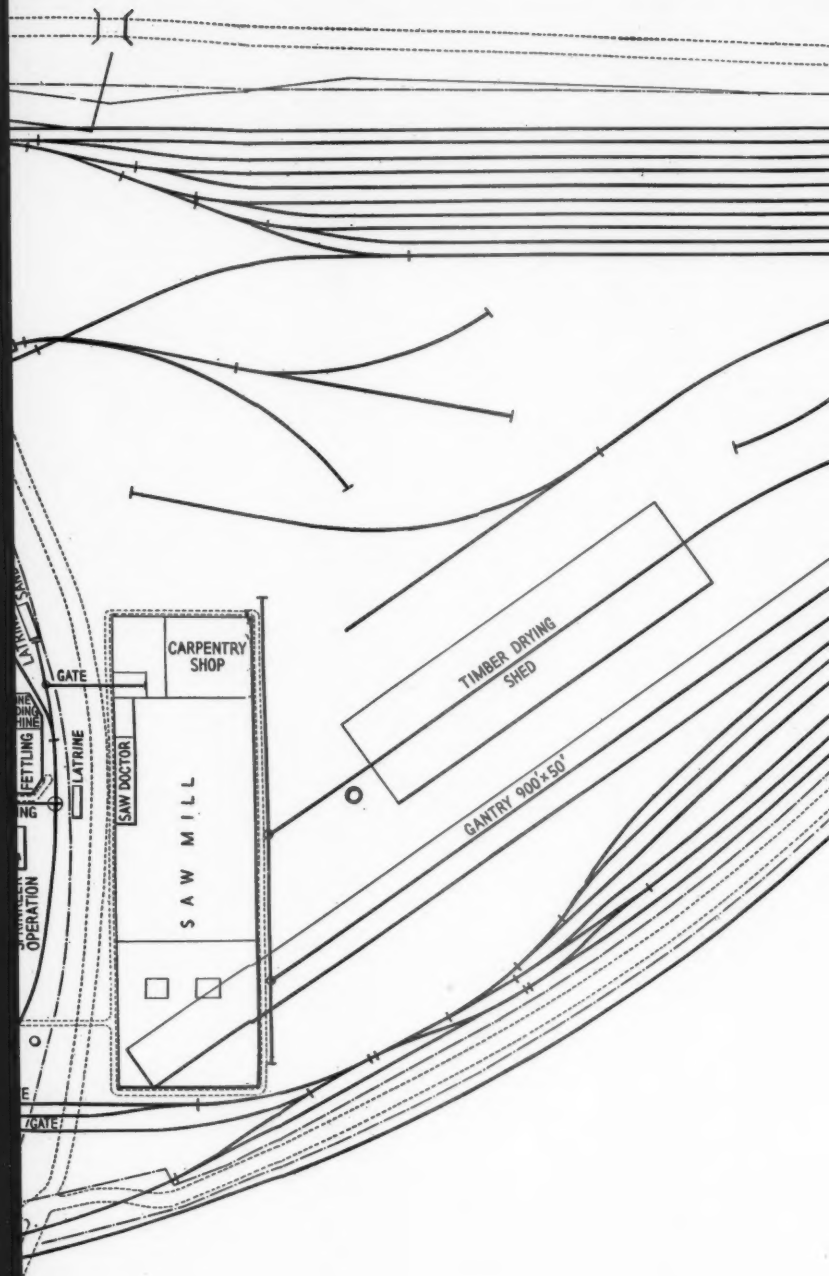
* Part I appeared in our January 24 issue



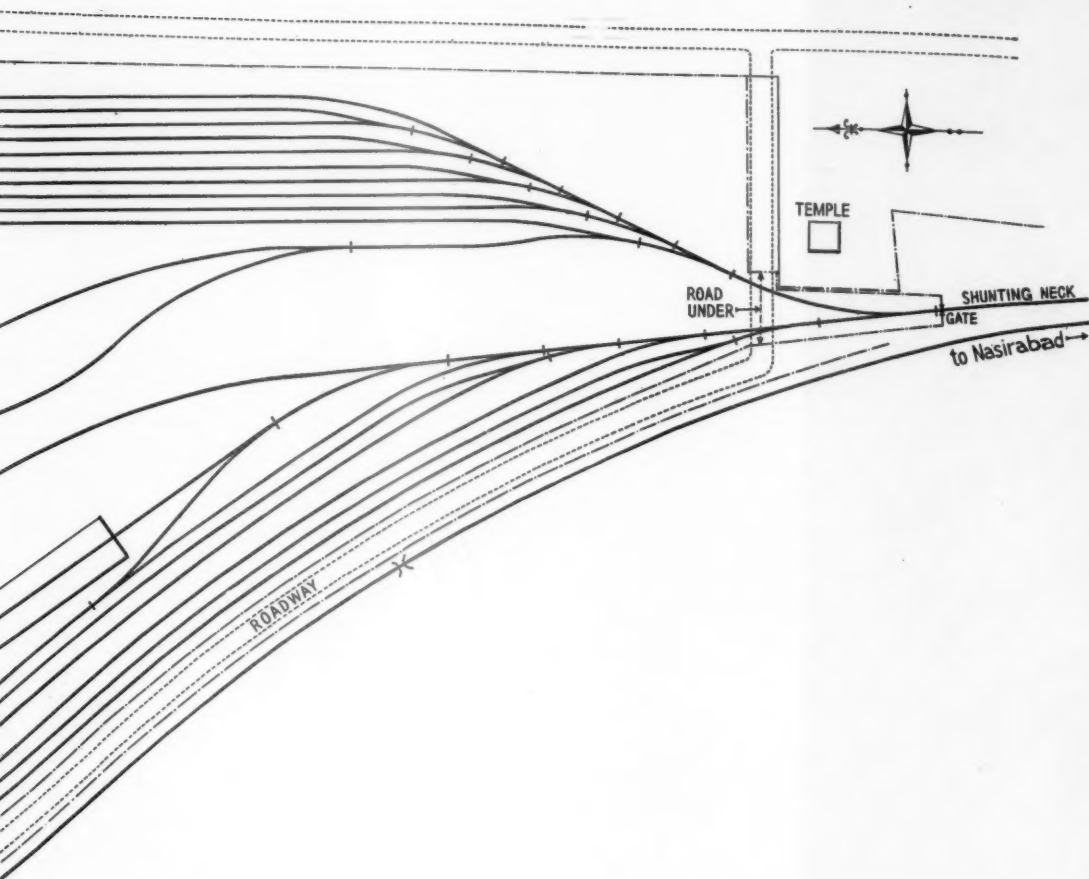
LAYOUT OF AJMER METRE



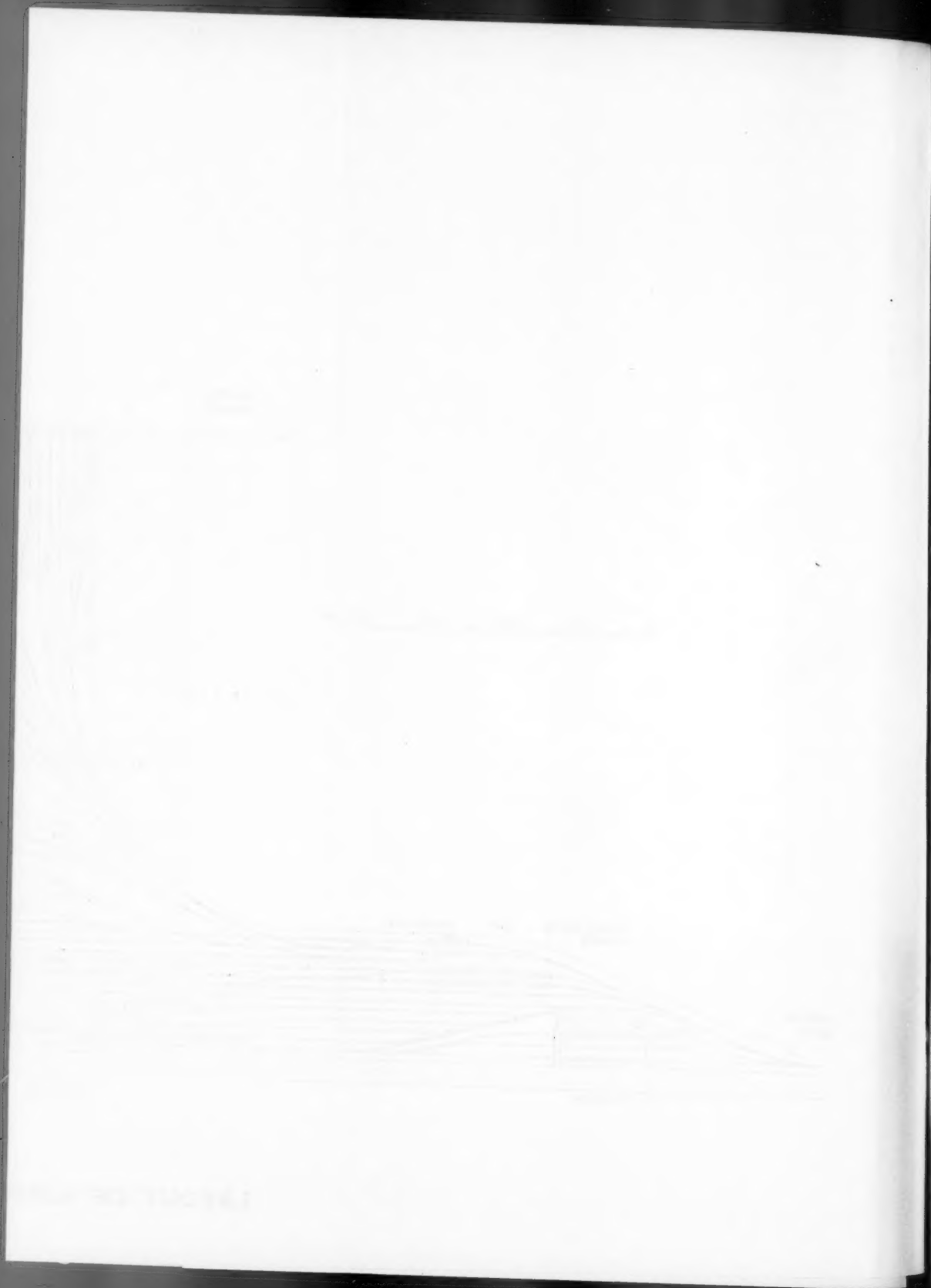
RAILWAY OF INDIA, AFTER COMPLETION OF REMODELLING



ERN RAILWAY OF INDIA, AFTER COMPLETION C



ON OF REMODELLING



in
n
n
o
c
th
c
b
h
h
th
b
ti
s
D
s
th
s
a
n
r
a
a
h
t
s
h
t
s
f
c
c

in certain shops are proud of the floor.

The present carriage repair shop is not equipped with overhead cranes, neither is there an adequate number of lines to ensure that an entire rake can be dealt with simultaneously. It is therefore intended to build a new carriage repair shop consisting of three bays, each equipped with 25-ton overhead cranes with a five-ton auxiliary hoist.

Since completion of the new shop, the present carriage repair shop is being used for carriage body construction.

Sawmill

A new sawmill has been built outside the present works area, to the south. Design is such as to allow all shafting to be accommodated beneath the shop floor. Equipment includes sawdust extractor equipment, which will also be accommodated below the sawmill floor. To provide for this arrangement the floor is built some 8 ft. above ground level.

A gantry unloads and stacks timber, and subsequently feeds logs to the breakdown saws. A sprinkler installation is provided, which in addition serves to cover the carriage repair, and body building shop, paint shop, and timber yard.

Wheel Shop Layout

A new wheel shop has been constructed, the design of which will enable wheels to be repaired on a production flow basis. Provision is also made for ample wheel park storage, the area of which is served by an electric overhead crane. Advantage has been taken to replace the older type wheel lathes and journal grinding machines with modern equipment. Equipment includes wheel lathes with pneumatic clamping and tooling, automatic profile type turning, journal burnishing lathes,

and so on. The existing gas heating plant is replaced by electric type heaters, and ultrasonic flaw detector equipment is provided.

Expansion of Machine Shop

The resiting of the sawmill permits the expansion of the machine shop and tool room. Many of the older machines with belt drive have been replaced with motorised machines, and this is provided for in the annual replacement programme. New equipment includes automatics, and special lathes with copying attachments, and pre-optive headstocks. Provision is being made in the tool room for thread grinders, jig borers, shadowgraph projectors, profile grinders, and heat-treatment equipment. The wagon repair department is in the open, and the premises include a body repair and lifting shop served by two electric overhead travelling cranes each of 20 tons capacity, fitted with three-ton auxiliary hoists.

Ancillary Shops

The plans also include the development of ancillary shops such as the blacksmith and spring shop, train lighting, millwrights, and so on. The blacksmith and spring shop is equipped with a modern heat treatment plant, but this will be further developed by car-bottom annealing furnaces, salt and lead baths. Improved general lighting has been provided, with a heavy material park adjacent to the shop. It was decided also to replace the former steam hammers by pneumatic hammers. The laboratory in the foundry is being developed by the addition of new equipment, and the floor space served by the overhead cranes is being expanded.

There are no major developments in the paint shop proper, as the increased capacity required has been found by the transferring of the saloon siding

which previously formed part of the paint shop. This space is being used for expanding the battery charging and train lighting sections, as well as the trimming department, which previously has been very congested because of lack of space.

Space is also available for subsequent development of the paint mixing section and paint stores.

Transport Repairs

The development of mechanical transport in the workshops area has made it necessary to enlarge considerably the repair facilities in the millwright department. Internal transport consisted previously of a fleet of motor lorries. This fleet has been augmented by the purchase of diesel-operated platform trucks and the introduction of stillages.

A machine tool reconditioning section has been developed, and this will form part of the developments envisaged in the millwright department.

Provision has already been made for supply of the necessary increase in pneumatic, hydraulic, and steam supply throughout the works.

Layout of Machine Tools

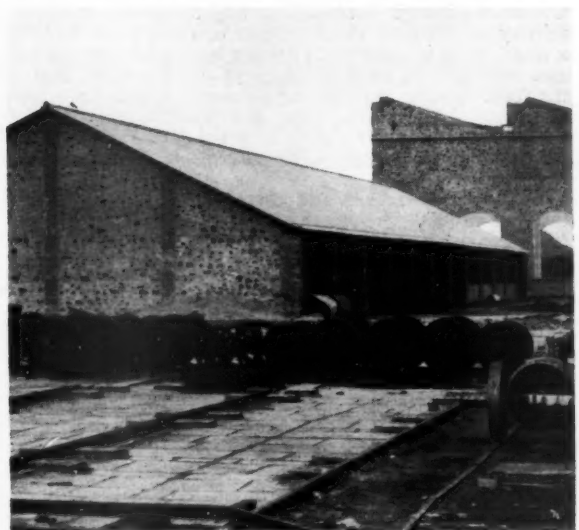
Besides the foregoing, it may be found necessary to adjust the layout of machine tools in the main machine shop to obtain an improved work flow. The scheme also allows for the provision of lighting to permit double-shift working, should this eventually be found necessary to meet any shortfall in repairs resulting from the Second Five-Year Plan.

The total expenditure envisaged by the management of the Western Railway is approximately Rs. 9 crores; this figure provides for broad- and metre-gauge expansion at Ajmer and elsewhere.

(Concluded)



Axlebox section in old workshops, cramped, and with insufficient weather protection



Axlebox section in remodelled works, showing ample roofed-in and open storage space

Proposed "Air-Rail" Link with London Airport

Monorail system employing dual-purpose road and rail coaches

THE "Air-Rail" system proposed as a link between central London and London Airport, as mentioned in our issue of January 24, would consist of high-speed, pneumatic-tyred coaches running on elevated concrete beams, the sides of which are gripped by horizontal wheels fixed under the coaches to afford stability. The coaches would also be equipped with road wheels, so that they could be handled like buses at the terminal and be taken, when desired, direct to the aircraft.

These proposals have been worked out to provide a ground service specifically designed to meet the needs of air transport. They were drawn up with a view to handling any passenger or air-freight load which is envisaged at London Airport. The journey time would be some 15 min. from the London terminal either to the North or the Central complex at the airport or direct to the aircraft.

Terminal and Route

The proposed route is that of the Southern Region of British Railways from Victoria via Clapham Junction and Feltham, and thence over open country to the airport. The practicability of this route from an engineering point of view, it is stated, has been recognised by the Chief Civil Engineer of the Southern Region. The existence of such a link with the airport would make it possible to co-ordinate much of the passenger and freight handling for all air services at the London air terminal.

A review of the possibilities has indicated that the best site for the London terminal would be Victoria. This combines the existing British Overseas Airways Terminal, a major railway terminus, a coach station and a nodal point in London Transport bus and underground services. Surveys of the route indicate that this would cause minimum interference with existing amenity and property rights, and with the least possible engineering difficulties.

The two-way track would consist of two pre-stressed, pre-cast hollow concrete beams carried above or along-

side the existing railway on reinforced concrete pillars, portals, or A-frames. The beams, for ease and speed of erection, would be made in 10-ft. sections assembled on site by pre-stressing cables to form 100-ft. lengths, in accordance with modern bridge-building practice.

The track could be at a higher or lower level as desirable and could be diverted to avoid the few buildings or bridges which occur on the proposed route. It would descend to ground level where the cars would travel on the ground to go round the periphery of the airport. This would avoid the heavy expense and delay involved in the construction of a tunnel to the Central complex, as "Air-Rail" coaches destined for it or for aircraft near it could use the existing road tunnel. It is envisaged that the ground level track round the airport be completed first.

Rolling Stock

Rolling stock would consist of lightweight passenger coaches and freight cars capable of rising above congested areas, and coming down to a ground level at termini. The coaches would be

capable of a 100-m.p.h. cruising speed. This limit is fixed by performance of tyres, but the track has been designed for speeds up to 250 m.p.h.

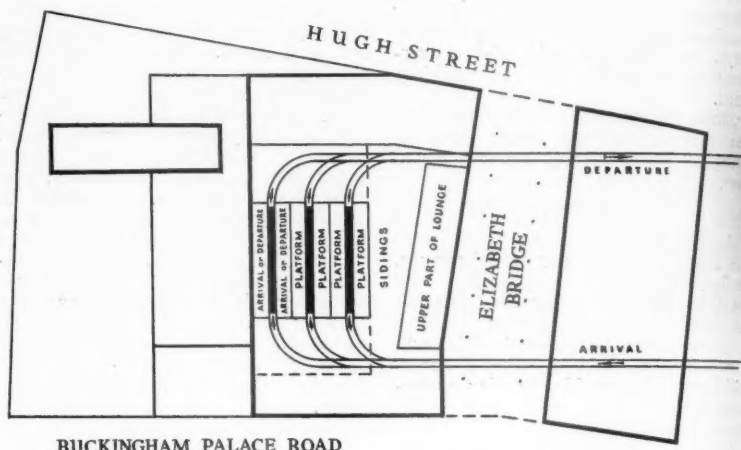
Diesel Propulsion

All coaches would be self-powered, diesel driven in the first instance and capable of operating singly or in two- or three-coach units. The power unit would be similar to that of a London Transport Green Line coach which is in the order of 130 h.p. Vehicles would be of ultra-light construction, of magnesium alloy and plastic, aerodynamic in form, 40 ft. in length with a maximum load of 50 passengers and their luggage, and weighing 12 tons fully laden. The suspension would be by metal-bonded rubber bearings from wheels to bogies and by auxiliary airbag suspension from bogies to coach.

Signalling and Braking

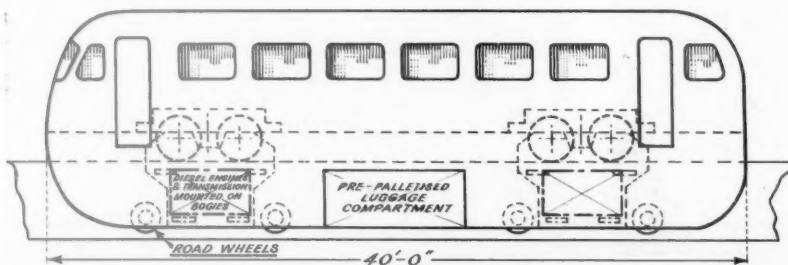
There would be no intermediate stops and, for the present, no junctions. Signalling, with interlocking automatic braking, would be by high-frequency induction loops in accordance with

(Continued on page 164)

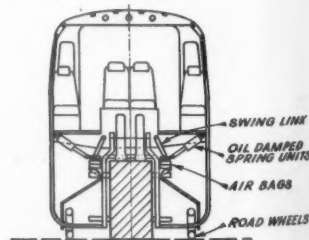


BUCKINGHAM PALACE ROAD

Plan of terminal at Victoria, showing position of platforms

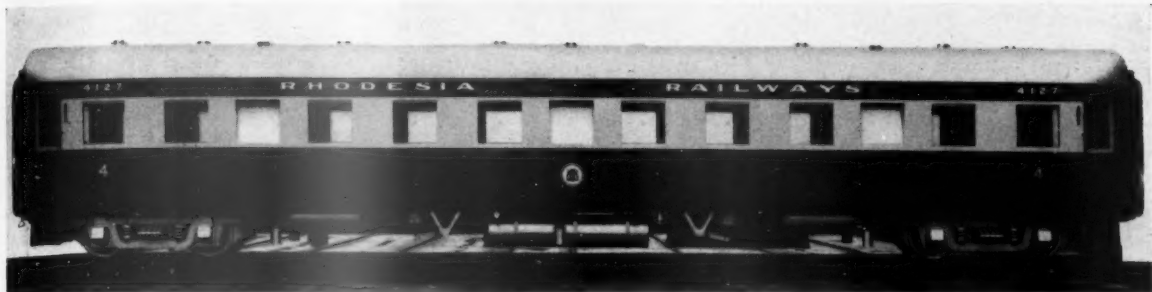


Side elevation of coach, showing arrangement of track and road wheels, and section through body showing suspension on air spring with automatic banking for curves



Fourth Class Coaches for Rhodesia Railways

Cellular roof construction to obtain effective heat insulation: easily cleanable materials used in interior



Gloucester-built fourth class bogie saloon coach for Rhodesia

RECENTLY completed by the Gloucester Railway Carriage & Wagon Co. Ltd. is the first of 24 fourth class main-line coaches for the 3-ft. 6-in. gauge Rhodesia Railways, part of an order for first, second, and fourth class stock. These differ in appearance from existing vehicles in a change from the clerestory roof with deck light ventilation, to a smooth, elliptical profile. In the interior arrangements and finish materials have been chosen which are easy to clean and which retain a clean appearance for considerable periods. Metallic fittings throughout are in non-corrosive materials.

Leading dimensions are as follow:

	ft.	in.
Gauge	3	6
Length over vestibules	63	5
Width over body panels	9	3
Height—rail to top of roof	12	5
Centres of bogies	47	6
Bogie wheelbase	6	1
Diameter of wheels	2	10
Weight	34	10 tons cwt.

The body sides are jig-built as a unit assembly, with the skin carried on

pressed-steel vertical members $3\frac{1}{4}$ in. \times $1\frac{1}{2}$ in. \times $\frac{1}{4}$ in. thick; the waist rail is a rolled channel 2 in. \times $\frac{1}{4}$ in. \times $\frac{1}{4}$ in. thick. The skin, made in 14 b.g. strip mill cold reduced steel, is secured by countersunk rivets and the joints butt-welded. The roof is of similar material 16 b.g. thick. A layer of Limpet asbestos is sprayed over the inside of the complete skin. Two angles, forming a Z section, are used to attach the body sides to the solebars.

Vestibule side entrance doors hinging inwards are positioned at each end of the open saloon coach. Plasticised asbestos fabric is used for the vestibule gangway bellows, instead of the normal canvas and leather.

The bodies are built on standard Rhodesia Railways underframes and carried on standard bogies. Vacuum brake equipment is by Gresham & Craven Limited.

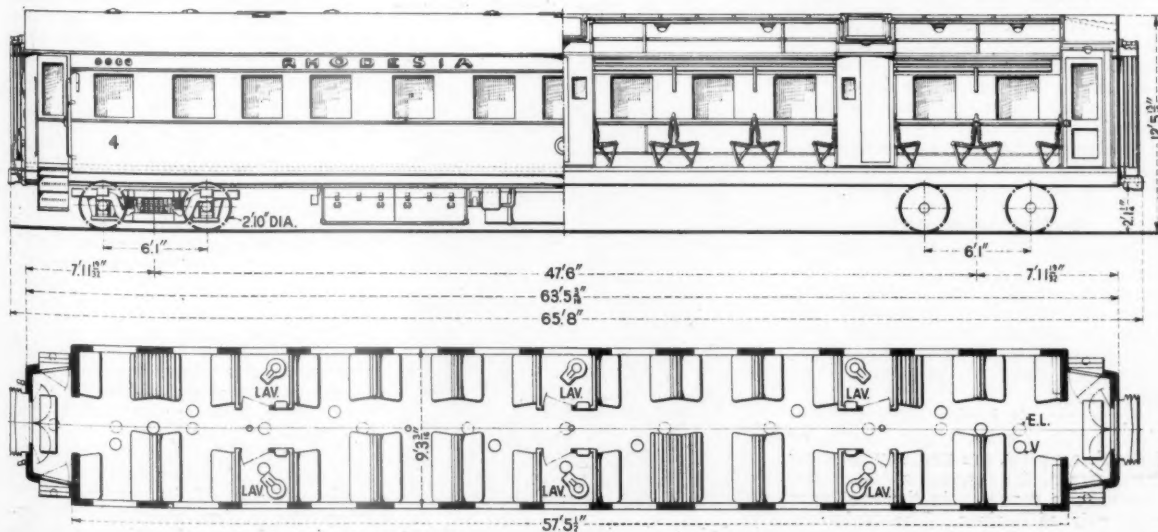
In the roof design close attention has been given to obtaining effective heat insulation, suitable for the high ambient operating condition. The cellular con-

struction of the roof is as follows: The underside of the roof sheet is sprayed with a layer of Limpet asbestos $\frac{1}{2}$ in. thick, and below this is a ventilated air space. This is followed by a 2-in. thick sandwich of Onozote carried on Z stringers, and below this is a dead air space. The ceiling panel is a layer of $\frac{1}{4}$ -in. Formica plastic sheeting bonded with Cellobond to $\frac{7}{8}$ -in. thick hardboard.

Ventilation

For the saloon ventilation eight Greenwood Airvac ventilators are trunked through the roof of the coach to aluminium grilles in the ceiling, and a ventilator is also fitted in the roof of each latrine cubicle.

Rawlings Sturdy R.R. Mk.1 windows are fitted throughout with polished plate glass $\frac{1}{4}$ in. thick. These windows are of the frameless, full-drop, balanced type with rubber sealing. This design makes full use of anodised aluminium and stainless steel, and incorporates other special modifications designed to meet



Half-section and plan, showing seating accommodation for 92 passengers



View through to further saloon showing (left of passage) hand pump for latrine tanks and Airvac ventilator in ceiling

the particular operating conditions. The banjo type latrine windows are glazed with toughened glass, painted and fired white.

The timber floor, 1½ in. thick, with teak coving, is carried on the Z-section steel pressing and covered in ¼-in. thick plain green cork linoleum. Tread plates are used in the vestibules.

Interior Finish

Formica veneered hardboard in a shade of light green Capri with glossy finish is used from the floor to the cantrail. Ivory soft-glow matt Formica veneer is used for the top ceiling panels with glossy ivory Formica for the lower panels.

The latrines are faced in Formica cocoa Capri on the outside and finished in Formica glossy grey Capri on the inside. Timber finish is colourless varnish on the beech mouldings, the birch parcel racks, and on the birch seat slats.

Steel pipework painted aluminium is used in the latrines, other metal fittings being in brass, chromium plated.

Seating Arrangements

Transverse seating accommodation is arranged for 92 passengers, with treble seats on one side and double on the other side of an off-centre gangway. The seats are formed from welded angle section, fitted with birch timber slats. Birch and beech slats are used for the parcel racks.

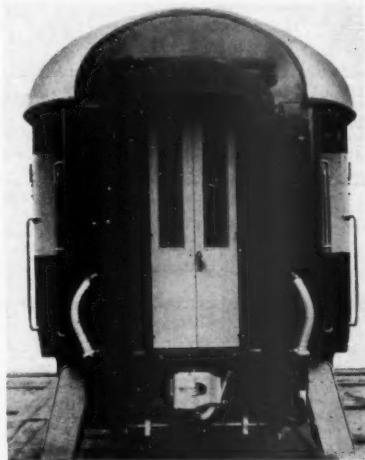
There are six latrine compartments. Two water storage tanks, each of 150 gal. capacity, are underslung below the centre of the car, and a 35-gal. service tank is mounted in the roof over each pair of latrines. The tanks are filled by a semi-rotary pump mounted on the compartment partition. K.D.G.

water level indicators being fitted in the system. A drinking water dispenser is recessed into each latrine corridor partition.

A row of Duriston roof lights, supplied by a Stone 24-V. axle-driven generator, is fitted in the centre of the coach. The lighting switches and fuses are housed in cupboards on the vestibule partition. Junction boxes are fitted adjacent to the battery box to permit easy renewal of the battery leads without extensive rewiring.

Couplers and Buffing Gear

English Steel Corporation 5½-in. × 5-in. central automatic couplers of the bottom release type are fitted; the buffing loads are taken through the two



End view, showing vestibule gangway connection and auto-coupler

9-in. × 3-in. inner longitudes to the bolster and solebars.

The exterior is finished in light stone enamel between the frieze rail and the waist rail, and brown enamel below the waist rail. Aluminium paint is used for the roof.

The following is a list of main sub-contractors:

Vacuum brake equipment	Gresham & Craven Limited
Wheels and axles	John Baker Bessemer Limited.
Springs	Thomas Turton & Sons Ltd. and Turton Bros. & Matthews Ltd.
Lighting equipment	J. Stone & Co. (Deptford) Ltd.
Automatic couplers	English Steel Corpn. Ltd.
Steel castings and axleboxes	Robert Hyde & Son Ltd.
Draw and buffing springs	G. Spencer Moulton & Co. Ltd.
Iron castings ..	Gloucester Foundry Limited
Formica veneers	Formica Limited
Bonding of Formica veneers	Insulation Equipment Limited
Balanced drop windows	Rawlings Manufacturing Co. Ltd.
Cold-rolled mild-steel sections	Ayrshire Dockyard Co. Ltd.
Sprayed asbestos	J. W. Roberts Limited
Onazote insulation	Expanded Rubber Co. Ltd.
Metallic fittings	John Levick Limited and Gabriel & Co. Ltd.
Airvac ventilators	Greenwood's & Airvac Ventilating Co. Ltd.
Linoleum ..	Michael Nairn & Co. Ltd.

Proposed Air-link with London Airport

(Concluded from page 162)

modern practice. If full advantage is to be derived from the high acceleration, cruising speed and braking, the terminals must be designed for pre-palletisation of luggage and rapid clearance of platforms. Plans have been prepared with this in view, pending a decision on terminal buildings.

Short Headway

The superior braking characteristics of rubber tyres, and also the absence of intermediate stops, would make possible a headway much less than that of orthodox railways. This improved figure would, with three-coach trains, give a capacity adequate to and beyond any envisaged peak load. Peak capacity with 30 coaches, might even be over 4,000 passengers an hr. in one direction. This could be greatly increased with more rolling stock, which is a relatively small capital outlay in comparison with the cost of the structure.

It is estimated that the total capital cost should not exceed £8,000,000. This excludes the cost of the terminal building at Victoria, but includes a suggested £1,000,000 compensation to British Railways for general facilities during construction.

A number of other authorities and commercial firms have been consulted. In the earliest stages of the project, a consultative study group was formed as a result of a meeting at the House of Commons, and includes representatives of a number of professional and public bodies. Some of its members have from time to time assisted in the formulation of general policy or in the solving of particular problems.

RAILWAY NEWS SECTION

PERSONAL

Sir George H. Nelson, Chairman of the English Electric Group, has been elected President of L.A.M.A., Great Britain. Mr. G. T. Owen, Managing Director, North British Locomotive Co. Ltd., has been elected Chairman.

Mr. H. G. Johnson took over as General Manager of the Eastern Region of British

and accounting functions; codified all the activities of the company, and installed punched-card methods, of which he was one of the pioneers in this country. In 1933 he was made Acting General Manager, and, in 1934, was confirmed in that position. In the same year he became Managing Director of Richard Garrett Engineering Works Limited. In 1938 he was appointed Managing Director of Beyer, Peacock & Co. Ltd. Mr. Wilmot has toured the U.S.A. and

Sir George H. Nelson, Bt., Chairman of the English Electric Co. Ltd., who has been elected President of the Locomotive & Allied Manufacturers' Association of Great Britain for this year, received his early training at the City & Guilds Technical College, London, and has since been made a Fellow of the College. He was awarded the Mitchell Exhibition and a post-graduate Brush studentship, and became a premium pupil of the Brush Electrical Engineering



Mr. Harold Wilmot
President of the L.A.M.A.,
1956-58



Sir George H. Nelson, Bt.,
Who has been elected President
of the L.A.M.A.

Railways on February 1, the day following the retirement of Mr. C. K. Bird. The Assistant General Managers of the Region are Mr. A. J. White, Mr. A. W. Tait, and Mr. S. G. Hearn.

Mr. Harold Wilmot, C.B.E., Chairman & Managing Director, Beyer, Peacock & Co. Ltd., the retiring President of the Locomotive & Allied Manufacturers' Association of Great Britain, was President of the Locomotive Manufacturers' Association from 1947 to 1950. Mr. Wilmot was born in 1895. After service in H.M. Forces throughout the 1914-18 war he joined Charles McNeil & Co. Ltd., Glasgow, with which company he served a special post-war apprenticeship. He displayed a special interest in and aptitude for the problems connected with production management and control, and, in 1924, was invited to join Beyer, Peacock & Co. Ltd. as Cost Accountant. He became Chief Accountant in 1926 and Comptroller in 1929. Mr. Wilmot reorganised the estimating, storekeeping, cost accounting

Canada, and on two occasions has visited Moscow to negotiate locomotive contracts. In 1939 he led a delegation of the Locomotive Manufacturers' Association to Turkey in connection with locomotive contracts secured under the Anglo-Turkish Loan, and later made an extensive tour of South Africa and Rhodesia. For some years he was Chairman of the North Western Management Research Group, and, in 1943, became President of the Institute of Cost & Works Accountants, which office he held for three years. Mr. Wilmot was elected Chairman of Beyer, Peacock & Co. Ltd. in 1949, a position he combines with that of Managing Director. He was made a C.B.E. in the same year. In 1956 he was appointed Chairman of the British Institute of Management, and in July of that year was elected President of the Locomotive Allied Manufacturers' Association of Great Britain. In July, 1957, he was named in a Resolution of the Municipal Council of the City of Paris for the award of the honour of the Silver Medal of the City.

Co. Ltd. At the age of 22 he was appointed that company's Chief Outside Engineer. He later joined the British Westinghouse Company (now Metropolitan-Vickers Electrical Co. Ltd.), and, by 1920, had established and become Manager of that organisation's Sheffield works. His association with the English Electric Co. Ltd. began in 1930, when he became Managing Director. Three years later he was appointed Chairman. During the war, and in addition to his work as Chairman of the English Electric Co. Ltd., Sir George Nelson was a member of the Heavy Bomber Group Committee of the Air Ministry and, in 1942, he was Chairman of the United Kingdom Tank Mission to America and Canada. In 1943 he became a member of the Reconstruction Joint Advisory Council; in 1944, a member of the Percy Committee on Higher Technological Education; and, in 1945, Chairman of the Government Census of Production Committee. In that year he assisted in the deliberations of the Government Committee on Future Scientific Policy. A

knighthood was conferred on him in 1943 and a baronetcy in 1955. A member of the Governing Body of the Federation of British Industries for the past 14 years, he was President of that body from 1943 to 1945. He is a Governor of Queen Mary College (University of London) and a Member of the Governing Body of that institution, an Honorary Member and an Honorary Fellow of the Imperial College of Science & Technology. Sir George Nelson is President of the Institution of Mechanical Engineers for the current session, 1957-58. Sir George Nelson, who is 70, relinquished

in 1951 he became Assistant Operating Superintendent, Scottish Region, Glasgow, and was appointed Chief Operating Superintendent, Scottish Region, in April, 1955.

We regret to record the death on February 1, at the age of 84, of Mr. Ashton Davies, C.V.O., O.B.E., M.Inst.T., Vice-President of the London Midland & Scottish Railway from 1938 until 1944. Mr. Ashton Davies, who was born in 1874, began his railway career in 1890 in the Telegraph Department of the former Lancashire & Yorkshire Railway. He later became

vested the responsibility for the whole of the company's organisation for dealing with the public in all phases of goods and passenger business and for the initiation of all facilities relating to traffic. In 1938 he became Acting Vice-President (Railway Traffic, Operating & Commercial) and was subsequently confirmed in this appointment. In 1941 a luncheon, presided over by the late Lord Stamp, then Chairman & President of the company, was given in his honour to commemorate his completion of 50 years of service with the L.M.S.R. and constituent companies. On a number of occasions he



Mr. F. C. Margetts
Appointed Chief Traffic Manager,
North Eastern Region



The late Mr. Ashton Davies
Vice-President, L.M.S.R.,
1938-44

the position of Managing Director of the English Electric Co. Ltd., while remaining Executive Chairman of the company, in 1956.

Mr. F. C. Margetts, M.B.E., Chief Operating Superintendent, Scottish Region, British Railways, as recorded in our January 17 issue, has been appointed Chief Traffic Manager, North Eastern Region, with headquarters at York. Mr. Margetts joined the service of the former L.N.E.R. in 1923. After experience at stations and district offices he was appointed a Traffic Apprentice in 1927 and underwent a period of special training in the North Eastern Area of the L.N.E.R. He subsequently worked in various Headquarters sections and was Head of Freight Trains Section at York from 1938 to 1943. He then moved to the Southern Area of the L.N.E.R. as Trains Assistant to the Superintendent. In 1945 he was appointed District Superintendent, Burntisland, in the Scottish Area of the L.N.E.R. and, in 1946, Assistant Operating Superintendent, Edinburgh. In

Personal Assistant to the Passenger Superintendent, a position he held under four Superintendents. During this period he was associated with many important developments, including the establishment of the Manchester train control system. While attending lectures on economics at Manchester University, Mr. Ashton Davies obtained one of the first scholarships given by the directors of the L. & Y. Railway. He took a prominent part in the establishment of the Manchester School of Signalling where he lectured for some years. In 1919 Mr. Ashton Davies became Superintendent of the Line and, on amalgamation in 1922, Divisional General Superintendent, Northern Division, L.N.W.R. In 1923 he was appointed General Superintendent, Western Division, L.M.S.R. From January 1, 1924, he became General Superintendent (Freight Services); in August of that year General Superintendent (Passenger Commercial) and, from October, 1931, Passenger Manager. A year later he was appointed Chief Commercial Manager. In this appointment was

served as Chairman of the Railway Clearing House Coaching Traffic Superintendents' Conference and of the Railway Goods Managers' Conference; he was Chairman of the Railway Statistics Committee and a member of the Common User of Wagons Committee. In 1927 he took a prominent part in the preparation of the railway case for submission to the Railway Rates Tribunal. He represented the L.M.S.R. in negotiations with passenger road transport undertakings with which the company was allied and was Deputy Chairman of Ribbles Motor Services Limited and a Director of Joseph Nall & Co. Ltd., Blackpool Omnibus Stations Limited, the Carter Paterson Co. Ltd. and the Hayes Wharf Cartage Co. Ltd. He was a member of a committee which prepared information for submission to the Royal Commission on Transport. He lectured on various aspects of railway transport and read a paper before the Institute of Transport in London in 1930 for which he received that body's Gold Medal. He was a foundation member of the Institute's Council, a member

of the Ministry of War Transport Commission for Merseyside; Chairman of the Railway Companies' Association Post-War Reconstruction Commission, and Chairman for two years of the Inter-Railway Companies Post-War Commission. He was also Chairman of the London Traffic Advisory Committee, a member of the London Chamber of Commerce (and a member of the Council of that body); a member of the Manchester Chamber of Commerce, and Assistant Provincial Grand Master, Lancashire (Western Division).

MR. ASHTON DAVIES
A GREAT RAILWAYMAN

May one who sat at the feet of "A.D." a quarter of a century ago pay a tribute of admiration and respect to a great railwayman at his passing?

He was surely the first, and easily the best, of the modern railway sales managers who only came to life after the first war, when the railways for the first time came up against fierce competition from other forms of transport, particularly the road. Some of your older readers will remember the impact of the big L.M.S. announcements, including whole page press advertisements, headed "Meet Mr. Ashton Davies." This was entirely new, and not very popular with some. But it struck a business note which was badly needed.

It happened that I was appointed Traffic Development Officer of the Southern Railway about the same time. I asked "A.D." if I might attend one or two of his sales conferences. His reply, in broad Lancashire, was immediate and characteristic: "By gorm you can." He took me into his fold and I went with him on his special train to two or three of these meetings, and came away invigorated and enriched. Much of what was later applied on the Southern came directly from the teachings of "A.D." and it is now that I should say this. He knew it, and it pleased him.

Of course, he was much more than a railway salesman; he was a traffic operator and altogether a railway leader of first quality. Perhaps the happiest memory is of him as Chairman of the Superintendents' Conference in the old Clearing House days. He would sail into the big room full of the joy of life smoking a cigar at 10 o'clock in the morning, neat as could be with his wing collar and black coat. He conducted these large meetings magnificently, with firmness and humour. If he saw a new face, particularly a young one, he would come over at once to shake him by the hand and make him welcome. There was no "side" about him at all, ever.

"A.D." was a splendid representative of a railway age now slipping away fast, whose personalities shone like stars.

J. E.

We regret to record the death on January 31, at the age of 75, of Mr. Alfred Ernest Hudd, at one time Consultant to the London Midland & Scottish Railway. Mr. Hudd began his railway career as a pupil in the Horwich Steam Locomotive Works of the Lancashire & Yorkshire Railway and was later transferred to the Electric Traction Department. He left the railway to concentrate on several inventions and later went to Australia where he served, first with McKenzie & Holland Limited and, later, in the Signal Department of the Victorian Government Railways. In 1918 he returned to this country to join the Automatic Telephone & Electric Co. Ltd. (as the Automatic Telephone Manufacturing Company was then known). He left by arrangement in 1925 to join the Automatic

Electric Company, Chicago, then an associate of the British company. During his service with A.T.M. he filed 32 patents on devices relating to railway signalling and control. In the early 1920's Mr. Hudd worked on his inductive type of automatic train control. In 1933 he became consultant engineer to the signal department of the L.M.S.R. and his system was eventually adapted for use on the Fenchurch Street-Southend-on-Sea section of the then L.M.S.R. Mr. Hudd retired in 1940. A standard A.T.C. system, incorporating features originated by him, was recently approved by the British Transport Commission for use on British Railways. Editorial reference to this is made elsewhere in this issue.

Mr. R. F. Graveson has been appointed District Commercial Officer, Cambridge, Eastern Region, British Railways.

Mr. H. Kinsey, Planning Assistant to Commercial Manager, Eastern Region, British Railways has been appointed District Commercial Officer, Liverpool Street.

Mr. T. C. B. Miller, Assistant Motive Power Superintendent, Eastern Region, British Railways, has been appointed Motive Power Officer (Great Eastern) in the new Traffic organisation of that Region.

Mr. W. Hargreaves has been appointed Assistant District Passenger Superintendent, Leeds, North Eastern Region, British Railways, and not Mr. W. Margreaves, as stated on p. 139 of our last week's issue.

Mr. W. Jackson, District Operating Superintendent, Birmingham (Western), London Midland Region, British Railways, has been appointed District Operating Superintendent, Leicester.

We regret to record the death on February 1, at the age of 77, of Mr. Thomas Hornbuckle, M.B.E., B.Sc., A.M.I.C.E., who retired in 1940 as Chief Inspector to the Chief Mechanical & Electrical Engineer, L.M.R.

At a meeting of the Road Haulage Association under the chairmanship of Mr. Herbert H. Crow, one of the Association's National Vice-Chairmen, a committee of 23 was appointed to promote the development of the international carriage of goods by road and to consider and advise on all matters affecting such international transport. Mr. J. A. Murly, Managing Director of I. Leftley Limited and of Continental Ferry Trailers Limited, was elected Chairman. Mr. J. S. Darbyshire, Director of Sutton & Son (St. Helens) Limited, and Mr. T. Nelson, Managing Director of T. Nelson (Liverpool) Limited, were elected Vice-Chairmen.

Mr. J. Kirkland, Glasgow Branch Manager of British Road Services, has been appointed District Manager, Southern Scotland. He succeeds Mr. J. P. (Ian) Young, who has been appointed Scottish Divisional Manager.

The following appointments have been announced by the British Transport Commission:—

General Staff of the Commission

Mr. P. Corbishley, Instructor, Work Study Training Centre, Watford, to be Senior Instructor, Work Study Training Centre, Watford, Manpower Adviser's Department.

Mr. G. V. Burks, Traffic Costing Officer, Costings Division, to be Senior Statistics Assistant, Railway Accounts Division, Finance Department.

Central Services of the Commission

Mr. E. J. Card, Assistant (Purchasing & Sales), London Midland Region, British Railways, to be Supplies Officer, Supplies Department.

Mr. W. J. Stevenson, Assistant (General), to be Standardisation Officer, Supplies Department.

The Tilling Group announces that Mr. R. E. Dunhill, Chief Engineer of the Lincolnshire Road Car Co. Ltd. since 1943, will retire on March 31. Mr. Dunhill began his service as Rolling Stock Inspector of United Automobile Services Limited in 1927. In 1928 he became Chief Engineer of East Midland Motor Services Limited, a company now in the British Electric Traction Group. In 1934 he transferred to Southdown Motor Services Limited, also as Chief Engineer. Five years later, he became Area Engineer of the Eastern National Omnibus Co Ltd. He took up his present position in 1943.

The Tilling Group announces the appointments of Mr. C. R. Buckley, Deputy Traffic Manager, Crosville Motor Services Limited, as Traffic Manager, Bristol Omnibus Co. Ltd., and of Mr. J. Niblock, Traffic Manager, West Yorkshire Road Car Co. Ltd., as Traffic Manager of Crosville Motor Services.

At a meeting of the committee of the Irish Railway Clearing House held on January 30, Mr. T. C. Courtney was unanimously elected Chairman for the year 1958.

Mr. André Ségalat, General Secretary to the French Government since September, 1946, has succeeded Mr. Louis Armand as Chairman of the French National Railways.

Mr. M. M. Greve, Commercial Superintendent, Ceylon Government Railway, has been appointed Operating Superintendent of that system.

We regret to record the death in November of Mr. F. H. Harrison, for 13 years until 1952 the Chief Mechanical Engineer of the South Australian Railways. On leaving the railway he went into industry, and at the time of his death was Managing Director of Austral Sheet Metal Works Limited.

Mr. A. H. Evans has been appointed Manager of Stores for the Canadian Pacific Railway in Montreal.

Mr. Edgar J. Denyar has been appointed Treasurer of Canadian National Railways, succeeding Mr. George S. Cowie, who has retired. Mr. Denyar, who was born in Montreal, began his railway career in 1926 in the Accounting Department of the Montreal & Southern Counties Railway, then a C.N.R. subsidiary, as an office boy. The same year he transferred to Canadian National Steamships as junior clerk. In 1929 he became a clerk in the C.N.R.'s Treasury Department and was promoted to be Credit Clerk in 1937. He subsequently became Assistant Treasurer, the position he now vacates.

Fellowships for 1957 have been awarded by the Mond Nickel Fellowships Committee to Mr. E. J. Williams of John Summers & Sons Ltd. and to Mr. R. J. D. Acheson of Mufulira Copper Mines Limited. Mr. Williams will study the research and production techniques, quality control and metallurgy of high quality low carbon strip steel in the U.K., on the Continent, and in the U.S.A. Mr. Acheson will study the extraction and refining processes for copper and allied metals, with particular reference to economic aspects.

NEW EQUIPMENT AND PROCESSES



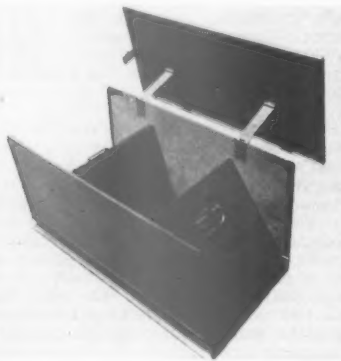
Collapsible Containers

A FORM of collapsible container, which has been tried, it is claimed, successfully, on the Swedish State Railways, is now being manufactured in this country. Known as the Retemba, it is made of laminated board with corner edgings of suitable heat-treated light alloy extrusions. There are no loose pieces.

It is designed to be stacked either when erected or collapsed. Apart from the advantages which it possesses in reducing packing and freight costs through its collapsible feature, it is also stated to have a longer useful life than a similar article made in aluminium alloy throughout.

The panels are constructed from a strong laminated timber specially bonded and treated to withstand rough usage and exposure in all weathers. Fittings are of cadmium-plated steel, the clasps being of spring steel. At each end of the container is an automatic clip-fastener, which incorporates a quick-release pull-toggle. The fasteners permit a wire-and-seal to be fitted. The accompanying illustrations show the appearance of the box when erected, and when partially collapsed.

The container collapses to 17 per cent of its extended volume. At present the container is being introduced in two sizes with internal measurements of 30 in. long \times 15 in. wide \times 15 in. deep and 30 in. \times 22½ in. \times 15 in. These have capacities of 3.9 cu. ft. and 5.8 cu. ft., and weigh 29 and 37 lb. respectively. The range can, however, be extended to meet almost any requirement up to about 6 ft. \times 8 ft. \times 4 ft., and the manufacturer will be pleased to receive inquiries. When packed the 5.8-cu. ft. container measures about 3½ in. deep.

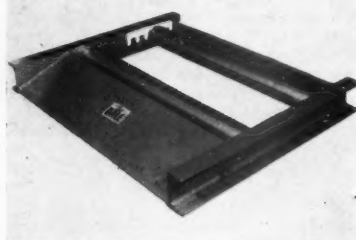


The price of the two sizes is £7 10s. and £8 5s. respectively, per 100. Delivery is around 10-12 weeks at present. The manufacturer is also considering making hiring arrangements. Retemba containers are produced by the Warwick Production Co. Ltd., Birmingham Road, Warwick.

Cable Drum Roller Equipment

UNLOADING frames have been developed for handling cable drums under the name of Roll-A-Drum. Railway applications include rolling off short lengths of cable in stores as required, cable laying along a track from an open truck, and assistance with overhead electric wiring.

At present the equipment is made in two sizes. No. 1 size is designed for single drums weighing up to 1 ton, and No. 2 size for two drums weighing up to 1 ton each. Details of the No. 1 size frame are: length, 2 ft. 4 in.; width, 2 ft. 10½ in.;



height, 4 in.; net weight, 98 lb.; respective details of the other size are 2 ft. 4 in.; 5 ft. 7 in.; 4 in.; 190 lb. The rollers are supported on ball bearings.

The prices of Sizes 1 and 2 are £11 10s. and £23 respectively; delivery is four to five weeks. The equipment is manufactured by Dale Electric (Yorkshire) Limited, Electricity Buildings, Filey, Yorks.

Swinging-Arm Ladle Heater

AN adjustable swinging-arm ladle heater, which can be fired by oil or gas, can be used for preheating all sizes of foundry ladles for iron and non-ferrous foundries.

The swinging arm is fitted on an adjustable lifting column to suit various heights of foundry ladles. It is fired by a low-pressure air-regulated fuel oil burner with oil and air control valves, complete with a combustion hood with a refractory lining, as illustrated. It can also be arranged for gas firing.

An air supply may be provided by means of a direct motor-driven fan for each unit or for a number of units in multiple.

The ladle is fabricated of mild steel, and consists of a cylindrical vertical pillar on which is mounted a refractory lined ladle cover and combined burner quarl. This is designed to pivot about the axis of the pillar and also to move up and down it.

The burner (oil or gas) is mounted on the refractory quarl and fires down through it into the ladle. Air/oil and/or



gas are supplied through flexible pipes to the burner.

The ladle is transported by crane or truck and placed in front or to the side of the ladle heater. The refractory cover is then adjusted to the correct height, to just clear the top of the ladle, and is then swung in position over the top of the ladle.

The burner is lit and adjusted to give the type of flame desired. When the ladle is required, the burner is turned off, the refractory cover is swung away and the ladle is taken away.

The ladle heater is manufactured by the Manometer Manufacturing Co. Ltd., Savoy House, 115-116, Strand, London, W.C.2.

Carbide Tool Reservicing Machine

THE Erodosharp Mark II carbide tool reservicing unit is a development of the manufacturer's earlier machine; two features which have been incorporated are two revolving electrodes and adjustable tool rests, and an extractor fan, built into the base of the machine. This latter enables fumes produced during processing to be ducted to atmosphere independently of other extractor systems.

Resembling a conventional grinding machine, the two revolving iron wheels are the electrodes. Metal particles are removed from the tool by the effects of a controlled electrical discharge between electrode and tool across a dielectric gap, which is a thin film of oil on the revolving electrode.

As there is no physical contact between electrode and tool, there is an absence of load on the wheel, wear due to abrasion, and heat generated in the tool. Thus the tip and shank of carbide tools can be ground together without any risk of the tip cracking from thermal shock. The conventional method of using different grinding wheels for roughing and finishing is thereby eliminated; finish selection is effected by operation of a three-position switch, which also gives a faster cutting rate suitable for the roughing process.

Reservicing times are stated to be com-



parable with those obtained by conventional methods. Tools reserviced by this process have been found to last as long, and in some cases longer, as tools re-ground in other ways. This is because the finish on tools sharpened by this process consists of minute saucer-shaped depressions which resist abrasion better than the minute ragged indentations left by ordinary grinding.

The life of the wheel is almost indefinite, as the slight pitting resulting from prolonged use can easily be smoothed off with an abrasive stick.

Erodosharp machines are manufactured by Wickman Limited, P.O. Box No. 44, Banner Lane, Tile Hill, Coventry.

Diesel Locomotive Oil Draining Unit

AN oil draining unit, type 1325ES, which is in operation in the North Eastern Region has recently been developed. It is basically a 50-gal. capacity tank into which waste oil can be drawn and from which the oil can be delivered to barrels and so on for disposal.

To enable these operations to be carried out speedily the unit is equipped with a Wakefield air-operated diaphragm pump, working at 80 or 150 lb. per sq. in.; two armoured hoses, 10-ft. and 3-ft. 6-in. long, are used for suction and delivery purposes.

To receive oil due to be drained, a drain bowl carrying frame is removed from the side of the unit and positioned either on an R.S.J. supporting the rails, or on the rails themselves. The frame is specially spring-loaded to assist fitment and removal.

The drain bowl, complete with a short length of rigid oil piping is then connected to a socket in the drain bowl frame. It can be positioned below any convenient drain point so that the possibility of splash and spillage is minimised.

With the bowl fixed to its frame, the suction hose is then connected to the base of the piping below the drain bowl, via a quick acting hose coupling. The unit is then ready to draw the drained oil from the bowl into its tank. The illustration shows the drain bowl in its stowed position.

In addition to the oil hoses, 30 ft. of air hose is also supplied so that the diaphragm pump can be connected to the air supply without affecting the manoeuvrability of the unit. The air hose is carried in a coil on the side of the unit when not in use.

The drain unit is mounted on two 16-in. dia. pneumatic rubber tyred wheels and two 8-in. dia. rubber tyred swivelling castors. Main dimensions are: height, 4 ft. 10 in.; length, 4 ft. 6 in.; width, 2 ft. 9 in.

The price of the type 1325ES unit is £208 10s. It is marketed in this country by Wakefield-Dick Industrial Oils Limited, 67, Grosvenor Street, London, W.1, from which further details may be obtained.

Portable Lubricator

THE manufacturer's portable knapsack lubricator which can be used for servicing mechanical signal gantries, points and so on, has been improved by the lengthening of the shoulder harness and waist belt.

This enables it to be worn over bulky protective clothing such as worn by an operator working in arduous overseas climatic conditions. The harness is now lighter and more flexible and is made of webbing straps.

The knapsack compressor has a large capacity and is hand operated; it was designed in this form for self operation at heights, for servicing large numbers of nipples where it is essential for the operator to have both hands free.

The equipment consists of a vertical lubricant container in the base of which is mounted a high-pressure pump connected through linkage to a long curved lever which passes over the operator's shoulder. The outlet steel-cored rubber-covered hose is fitted with a ball-jointed metallic flexible connection terminating in a Tat hook-on connector.

The container is mounted upon a strong padded backboard which is provided with



stout shoulder harness and a waist belt. It has a capacity of 9 lb. of lubricant. The standard delivery hose is 5-ft. long. The compressor is designed for use with any good quality soft self-collapsing grease.

Details can be obtained from the manufacturer, Telcalemit Limited, Plymouth.

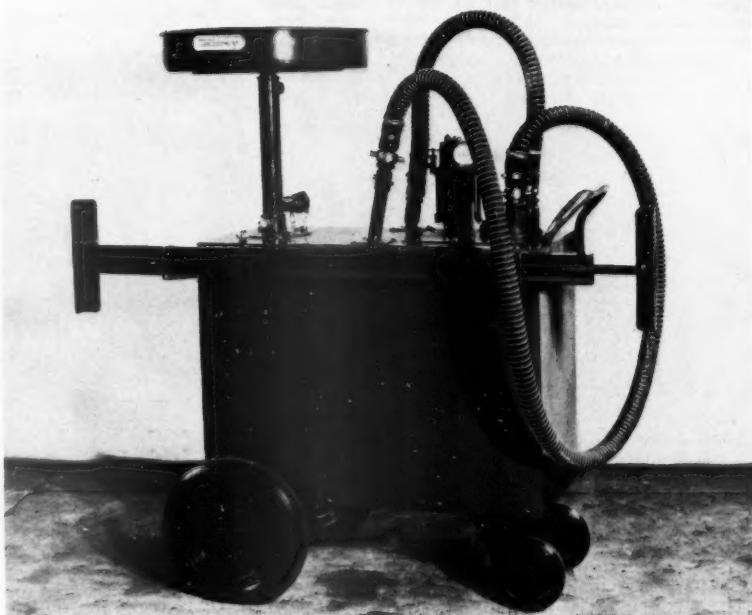
Air Purification Unit

A COMPACT electrically-operated unit, known as the Ozon Seabreeze, has been developed for continuous air purification. It can be used in railway coaches, offices, waiting rooms and so on.

The unit is capable of working automatically for long periods without attention; a single unit is capable of dealing with a volume of up to 1,800 cu. ft. It operates by converting oxygen in the air to ozone which has odour-absorbing properties.

Current required for a single unit is 0.035 A. at 12 V.; the components can be doubled and trebled as required, and adapted for other voltages.

Each unit measures 10 in. by 4 in. by 4 in. Full details can be obtained from R.A.B. Products, 31, St. George Street, Hanover Square, London, W.1.



Study of Economics of Transport at Oxford

Brief reference was made last week to the acceptance by Oxford University Congregation of the offer by the Institute of Transport to endow in the University a readership and research fellowships in the economics and organisation of transport. The Institute has amplified this information as follows.

The Institute of Transport has sponsored during the past two years the project to establish a readership and research fellowships in the "economics and organisation of transport." A substantial sum of money was required to initiate the project and the Council of the Institute has announced that a sufficient sum was promised by associations and individual undertakings in or connected with the transport industry, and by users of transport, to enable the Institute to make a formal offer to the University.

This offer was welcomed by the Hebdomadal Council of the University, and the Institute has completed a covenant to transfer the donations to the University over the next 10 years. Congregation approved its acceptance on January 28. It is hoped that the final stages will be completed on February 11. The scheme in its final form will cover not only a readership but also the establishment of research fellowships—it is hoped at least two—in the colleges; provision is also made for the making of grants to other members of the University to encourage and advance the study of the economics and organisation of transport.

Reader's Appointment

The reader, who will hold office for seven years and be eligible for re-election, will be appointed by an electoral board. The readership may be held with a stipendiary fellowship at a college.

It is hoped that the first appointments to the readership and fellowships will be made with effect from the next academic year, that is, from October, 1958. Colleges are to be invited, in consultation with the Board of the Faculty of Social Studies, to appoint the research fellows.

The donors have agreed that the actual out-of-pocket expenses incurred by the Institute in sponsoring the scheme should be re-imbursed to it from the endowment fund, but the work generally of promoting it and building up the amount required

has been and continues to be shouldered by the Council of the Institute as part of the general activities of that body.

The contributors to the endowment fund are:—

Bristol Aeroplane Co. Ltd., British Electric Traction Co. Ltd., British Plaster Board (Holdings) Limited, British Timbers Limited, the British Transport Commission, B.T.R. Industries Limited, Calders Limited, Canusa Limited, the Chamber of Shipping of the United Kingdom, Charrington and Co. Ltd., Courage & Barclay Limited, Crosbie & Blackwell (Holdings) Limited, Distillers Co. Ltd., Dock & Harbour Authorities Association, Dunlop Rubber Co. Ltd., English Electric Co. Ltd., Esso Petroleum Co. Ltd., F. T. Everard & Sons Ltd., Goodyear Tyre & Rubber Co. (Great Britain) Ltd., Arthur Guinness, Son & Co. Ltd., Imperial Chemical Industries Limited, J. Lyons & Co. Ltd., J. Stone & Co. (Holdings) Ltd., Joseph Rank Limited, Leyland Motors Limited, Littlewoods Mail Order Stores Limited, Mobil Oil Co. Ltd., the Road Haulage Association, Rowntree & Co. Ltd., Schweppes Limited, Shell-Mex & B.P. Limited, Tate & Lyle Limited, Transport Development Group Limited, Tube Investments Limited, Unilever Limited, and United Glass Bottle Manufacturers Limited.

Additional Scottish Diesel Services

On February 3, the recently-instituted hourly train service between Corstorphine, Edinburgh Waverley, and North Berwick was turned over to diesel multiple-unit trains, as recorded last week. The sets used are the lightweight diesel-mechanical twin-car sets built by the Gloucester Carriage & Wagon Co. Ltd. in collaboration with the Transport Sales Development Department of T. I. (Group Services) Limited; the power equipment was supplied by British United Traction Limited. The sets were described in our issue of July 26, 1957.

There are now systematised running times in the westbound direction, leaving North Berwick at 30 min. past the hour from 7.30 a.m. to 9.30 p.m. (except 8.15 a.m., 4.41, 5.33 and 6.35 p.m.). In the reverse direction the departures from Corstorphine will be mostly at 10 or 15 min. past the hour, but from Edinburgh Waverley more uniformly at 30 min. past the hour. In most cases there are slight accelerations of the previous times with steam power.

On February 17 the service between Edinburgh and Galashiels via Peebles East will also be taken over by diesel trains, and considerably expanded. New trains will be run from Waverley at 9.10 a.m.,

12.20, 4.21 and 6.26 p.m., and the Saturday 8.50 p.m. will start at 8.45 and run daily; previously the last train of the day from Mondays to Fridays has been the 5.5 p.m. In the reverse direction there will be new trains from Galashiels at 11.15 a.m., 2.6, 6.5 and 8.35 p.m., while the 10.16 a.m. will start at 10.0 a.m., and the 7.15 p.m. on weekdays and the 1.5 p.m. on Saturdays only will be withdrawn. The effect of these changes will be roughly to double the passenger service over this line.

As soon as possible thereafter it is proposed to provide this type of service on the Corstorphine-Waverley-Outer Circle-Waverley-Rosewell-Corstorphine route and on the line Musselburgh-Waverley-Inner Circle-Waverley-Musselburgh, to be followed by diesel railcars from Edinburgh Princes Street Station serving Princes Street, Dalry Road, Murrayfield, Craigleith, East Pilton, Granton Road, Newhaven and Leith North.

Sir Ian Bolton, Chairman, and Members of the Scottish Area Board, and Mr. James Ness, General Manager of the Scottish Region of British Railways, were present at Waverley Station on January 28, when one of the new trains was on display.

Snow-Blocked Lines in the Scottish Region

The recent wintry weather caused particular difficulties in the North East of Scotland, when strong northerly winds piled dry snow into drifts which in places were reported as 9 ft. deep. Snow ploughs had to be used over a wide area of the northern counties, but the area which bore the brunt of the storm was the small triangle north-east of a line drawn from Aberdeen to Elgin.

On January 20, the first blockages occurred on the Kintore to Alford and Inveramsay to Macduff branches of the Scottish Region; these have freight services only, and although ploughs encountered heavy drifts on several passenger lines they were able to keep all the routes open.

Two days later, however, the wind, which for a time had abated, increased in strength, and early on January 22 a freight train on the main line between Aberdeen and Elgin was stopped in a drift approaching Carnie Junction, although efforts to keep the other line at this point open were successful. However, the same afternoon the "Coast" portion (via Buckie) of the 12.45 p.m. express from Inverness to Aberdeen encountered a snow drift between Cornhill and Glenbarry, and it was nearly 4 hr. before a way could be opened for it to proceed. This train was immediately followed by a snow plough; but the snow was drifting in so quickly from the neighbouring fields that almost immediately afterwards the 6 p.m. from Elgin to Aberdeen was stopped at the same place, and could not be released until the following morning.

Meanwhile, on the Fraserburgh branch similar conditions were being encountered. The 4.2 p.m. train from Aberdeen to Fraserburgh failed to negotiate a drift between Brucklay and Strichen, despite the assistance of two engines in the rear. A relief train was brought from Maud to take the passengers back to that station, but four women passengers, one of whom had just been released from hospital and would have had difficulty in walking through the snow, elected to stay in the train through the night until they could be taken by a tractor to a neighbouring farmhouse, where they were cared for.



Diesel train at Waverley Station, Edinburgh, one of the new sets working the Corstorphine-Waverley-North Berwick service

In the remainder of the Scottish Region, although certain lines achieve altitudes of 1,400 ft. (at Druimachdar, on the Perth-Inverness main line) and over 1,000 ft. at Beattock (on the Glasgow Central to Carlisle main line), at no time was traffic working wholly interrupted.

L.A.M.A. Annual Dinner

The annual dinner of the Locomotive & Allied Manufacturers' Association was held at Claridges Restaurant, London, W.1, on January 30. The President of the Association, Mr. Harold Wilmot, Chairman & Managing Director, Beyer Peacock & Co. Ltd., presided. Amongst those present were the incoming President of the Association, Sir George H. Nelson, Chairman, the English Electric Group of Companies, and Mr. Leslie Gamage, Chairman & Managing Director, the General Electric Co. Ltd.

The toast to the retiring Chairman of the Association, Mr. C. C. H. Wade, Manager, Traction Sales & Contracts, the English Electric Co. Ltd., was proposed by the incoming Chairman of the Association, Mr. G. T. Owen, Managing Director, North British Locomotive Co. Ltd. Mr. Owen presented Mr. Wade with an inscribed silver salver on behalf of all members.

The toast "The British Locomotive Industry and the President" was proposed by Mr. T. A. Crowe, Chairman & Chief Managing Director, North British Locomotive Co. Ltd.

The health of the incoming President of the Association was proposed by Mr. Wilmot, who thereupon invested Sir George Nelson with the L.A.M.A. Presidential chain of office.

As his first task as President of the Association, Sir George Nelson presented replicas of the L.A.M.A. monogram badge to his two predecessors in office, Mr. Crowe and Mr. Wilmot.

Those attending the dinner were:

Andrew Barclay Sons & Co. Ltd.: Mr. S. E. H. Kewney, Director & General Manager
Hudswell Clarke & Co. Ltd.: Mr. G. W. C. Birdsall, Director (Member of Council)

Hunslet Engine Co. Ltd.: Mr. J. F. Alcock, Chairman & Managing Director; Mr. C. R. Clayton Fryers, Director & General Manager
North British Locomotive Co. Ltd.: Mr. T. A. Crowe, Chairman & Chief Managing Director; Mr. G. T. Owen, Managing Director (Chairman-designate of the Association)

Vulcan Foundry Limited (and Robert Stephenson & Hawthorns Limited): Mr. G. Collingwood, Managing Director (Member of Council)

Vulcan Foundry Limited: Viscount Bridgeman, Director; Mr. V. S. Mullen

Yorkshire Engine Co. Ltd.: Mr. E. R. S. Watkin, Director

W. G. Bagnall Limited: Mr. W. A. Smyth, Managing Director; Mr. H. Davies, Director

Beyer Peacock & Co. Ltd.: Mr. H. Wilmot, Chairman & Managing Director (President of the Association); Mr. L. T. Dawes, Commercial Director (Member of Council); Mr. J. Hadfield, Technical Director; Colonel J. A. T. Barstow, Director

Peckett & Sons Ltd.: Mr. W. T. Peckett, Director

Drewry Car Co. Ltd.: Brigadier W. H. Crosland, Chairman; Mr. W. J. Wakley, Managing Director (Member of Council)

English Electric Co. Ltd.: Sir George H. Nelson, Chairman (President-designate of the Association); Mr. C. M. Cock, Manager, Traction Department; Mr. C. C. H. Wade, Manager, Traction Sales & Contracts (Chairman of the Association); Mr. K. A. Lane, Personal Assistant to Sir George Nelson

John Fowler & Co. (Leeds) Ltd.: Mr. F. Turner, General Manager

E. E. Baguley Limited: Mr. F. C. Souster, Director

Walker Bros. (Wigan) Ltd.: Mr. A. G. Ellis

Harland & Wolff Limited: Mr. N. McCallum, Director

Brush Traction Limited: Mr. F. H. Wood, Manager

Metropolitan-Vickers Electrical Co. Ltd.: Mr. J. Roston, Traction Department, Manchester; Mr. J. O. Sims, Traction Department, London

British Thomson-Houston Co. Ltd.: Mr. W. B. G. Collis, Manager, Traction Department; Mr. J. H. Cansdale, Traction Department; Mr. M. W. Rees, Traction Department

General Electric Co. Ltd.: Mr. L. C. Gamage, Chairman & Managing Director; Mr. F. A. Manley, Manager, Traction Department (Member of Council)

Lister Blackstone Rail Traction Limited: Colonel R. T. Brain, General Manager
Locomotive & Allied Manufacturers' Association: Mr. G. R. Curry, Director

E.C.A.F.E. Railway Sub-Committee in Malaya

The Railway Sub-Committee of the Transport Committee of the United Nations Economic Commission for Asia & the Far East, after its Fifth Session in Bangkok last December made a tour of inspection of the Malayan Railway, as recorded in our December 27 issue. Mr. C. G. Harrison, General Manager, Malayan Railway, and Vice-Chairman of the Railway Sub-Committee, acted as host on behalf of the Governments of the Federation of Malaya and Singapore. The sub-committee, consisting of representatives from 14 countries, arrived at Padang Besar on December 16 by special train from Bangkok. After inspecting the new station at Padang Besar, the frontier station jointly owned by the Malayan Railway and the State Railways of Thailand, the party travelled by special train to Prai, where the station and the Penang Port Commission wharves were inspected; later, it embarked on a railway ferry for Penang. On December 17 an inspection was made of harbour installations at Penang; a journey was made later up Penang Hill by the funicular railway. The touring party left Penang by ferry the same evening for Prai where they joined the night mail train bound for Kuala Lumpur.

The tour of inspection next day included the Malayan Railway's main works at Sentul, the general stores, the traffic control office, the mechanised accounting section of the Chief Accountant's Office, the Civil Engineering Department central drawing office, the railway station, goods depot and marshalling yard.

In the evening the sub-committee was entertained to an official dinner at the Station Hotel, by the Government of the Federation of Malaya.

On December 19, the party went by



Delegates of E.C.A.F.E. Railway Sub-Committee at the dinner given by the Government of the Federation of Malaya



Inspecting apparatus in the mechanised accounting section of the Chief Accountant's office, Malayan Railway, at Kuala Lumpur

special train to Port Swettenham where they inspected the port installations. Returning to Kuala Lumpur they were entertained to luncheon by the Port Swettenham Board of the Malayan Railway Administration.

Next day, the sub-committee left Kuala Lumpur by special train to Singapore, and the following morning inspected the Singapore Harbour Board installations.

Mechanised Accountancy in N.E. Region

Traders' traffic accounts in the Hull and York Districts of the North Eastern Region of British Railways have been mechanised and concentrated in the new traffic accounts office at Hull Neptune Street. The accounts of 217 stations located in an area bounded approximately by Goole, Selby, Harrogate, Thirsk, and Whitby are included in the new organisation.

The scheme has been introduced in four stages, the first of which came into operation last June. This included the accounts for Hull Central and branch stations including Bridlington and Driffield. The second stage took in the remainder of the Hull District stations, and the third stage covered the fish traffic from St. Andrews Dock. The final stage has now brought into the scheme all the York District stations, and the centralised accounts office is now handling some 7,000 consignment notes a day.

The consignment notes, on being received from the various stations, are first sorted into alphabetical order of traders and microfilmed for record purposes. All the details required for accountancy purposes are coded and punched on to cards which, after being verified, become the source from which debit lists, accounts, and statistical information is later compiled. Tabulating machines, to which continuous stationery devices have been fitted, produce the traders' account from the punched card. The account is rendered to the trader with the originals of his consignment notes.

To arrange the cards in the order required to produce any particular account or statistical statement, two machines are used.

The first machine sorts the cards at the rate of 36,000 an hr. The other merges, selects, extracts, and compares cards at very high speeds. The machines are of Hollerith type supplied by the British Tabulating Machine Co. Ltd. The microfilm and reading equipment has been supplied by Kodak Limited.

The new centre occupies the goods office of the former Hull & Barnsley Railway Company at Hull Neptune Street. Structural alterations, including the provision of new lighting, central heating, and improved toilet and telephone facilities, have been carried out.

SUSPENSION OF CANADIAN RAIL FREIGHT INCREASES.—Increases in freight rates on export-import rail traffic through Canadian ports which were planned to be introduced on February 15, have been suspended indefinitely. This action has been taken by the Canadian Board of Transport Commissioners. Major beneficiaries from the delay will be exporters of flour through Canadian ports. Had the railway move gone through, they would have been subjected to an increase of 6 cents per 100 lb.

Questions in Parliament

Pensions of Railway Superannuitants

Dr. H. M. King (Itchen, Southampton—Lab.) asked the Minister of Transport & Civil Aviation on January 22 whether he would raise the pensions of British Railways superannuitants because of the rise in the cost of living since the last adjustment was made.

Mr. Harold Watkinson: No. I must leave it to the B.T.C. to decide the extent to which its circumstances permit it to give supplements to railway pensioners.

Dr. King: The few shillings which the lowest-paid superannuitants received in those days as an increase hardly matched the then rise in the cost of living, that two years of inflation have followed, and that some of these veteran servants of British Railways are enduring hardship.

Mr. Watkinson: I do not disagree with that. I certainly felt that it was right to press the Commission, as I did, to do the utmost it could, but when in its judgment the Commission tells me, as it has, that it has gone to the limit for the moment, I must accept its view.

Dr. King: What percentage increase has been made in the pensions of British Railways superannuitants since 1947?

Mr. Watkinson: The B.T.C. schemes of pension supplements are not based on percentages. I am sending the hon. Member details.

Dr. King: The details will show that these superannuitants have never had their pensions increased at anything like the same rate as State and local government servants, whose pensions are covered by the various Pensions (Increase) Acts. Even in the improvement made in April, 1956, quite a number of these superannuitants received no increase in their pensions at all.

Mr. Watkinson: I shall draw the Commission's attention to what Members said, but I must rest on my previous answer that this is the Commission's decision.

Parliamentary Notes

Railway Facilities at Airports

Mr. Harold Watkinson, Minister of Transport & Civil Aviation, in a discussion in the House of Commons on January 27 on airways corporations, said of the new airport at Gatwick, which the Queen will inaugurate on June 9:—"This will be the first airport in the world to combine air, rail, and road transport in one unit. Therefore, passengers will be able to travel directly to and from the airport by road or rail, and there will not need to be a town terminal."

Of London Airport the Minister stated that a monorail was being considered. He could not give his views on this until the Chief Inspecting Officer of Railways had pronounced whether it was a safe form of passenger transport at the very high speeds, which would be considerably higher than those in Germany; so that the German (Alweg) monorail would not necessarily be the answer for this country. They would need a bus which could be taken off the monorail and run round the airport, to avoid building a tunnel underneath the airport. He had to await technical advice. Another possibility was a railway link, which had been surveyed and details of which he had now before him.

That was a very expensive project, because it involved a deep tunnel under the airport runways. It would cost about

£20 million—or not much less. He hoped to come to a conclusion on both projects before long.

Dagenham Accident

Mr. Harold Watkinson, Minister of Transport & Civil Aviation, on January 31, in the House of Commons, after giving brief details of the accident the previous evening at Dagenham, stated in reply to a question that the locomotive involved was fitted with A.T.C. The matter would be fully investigated in the inquiry by Brigadier C. A. Langley. He had been informed that the preparations for electrification had no effect on this accident; also that the signalling system—which, eventually, would be replaced when the line was electrified—was perfectly in order and quite adequate; this would be looked into.

Mr. S. J. McAdden (Southend E.—C.) said that as one who travelled on this line almost every day, he wished to add his expression of sympathy to those who have suffered. While they must await the report of the inquiry, he would like to ask the Minister to bear in mind the grave disquiet caused to people by these two very recent accidents (St. Johns and Dagenham) in fog in South-Eastern England, and to do something as quickly as possible to allay public anxiety.

Mr. Watkinson stated that—while certainly not commenting on the Dagenham accident—the previous accident at St. Johns undoubtedly had a grave element of human error in it. He had taken steps that day to see that the Chairman of the B.T.C., Sir Brian Robertson, reminded all concerned of the very serious burden which fell upon them in conditions of acute fog such as they suffered on the previous night.

Staff and Labour Matters

London Busmen's Wage Claim

On February 3 the London Bus Workers Negotiating Committee considered a report by the General Secretary of the Transport & General Workers Union on the refusal of the Minister of Labour to appoint a committee of inquiry into the dispute which has arisen with the London Transport Executive in connection with the union's claim for an increase of 25s. a week in the rates of pay of London busmen.

Later, delegates representing the 50,000 London busmen considered a proposal that authority should be sought from the union executive for strike action; but this proposal was dropped because the majority in favour of such a course fell a few votes short of the required two-thirds.

A resolution was then submitted by the General Secretary of the T.G.W.U., Mr. F. Cousins, that the claim be submitted to arbitration. After a long debate the resolution was carried by 92 votes to 40. The claim will now be submitted to the Industrial Court.

RECORD OUTPUT FROM DAVID BROWN MACHINE TOOL DIVISION.—The machine tool division of David Brown Industries Limited of Manchester, despatched a record volume, totalling nearly 400 tons, of gear-cutting plant during the six weeks to the end of January. A large proportion was exported to countries including Italy, Sweden and Japan. The latest order from France is for two large machines capable of producing turbine gears and pinions up to 220 in. and 60 in. dia. respectively.

Contracts and Tenders

Broad-gauge rail-mounted cranes for India

Thomas Smith & Sons (Rodley), Ltd., has received a contract to the value of £285,000 from Indian Railways for 27 broad-gauge steam and diesel-operated travelling cranes.

The British Transport Commission, South Wales Docks, has placed the following contracts:—

South Wales Switchgear, Limited: renewal of crane services, and supply and delivery of switchgear and transformers for Nos. 5 and 6 sub-stations, South Quay, with two wing isolators and circuit breaker for new sub-station, North Dock, Newport

Fairfield Shipbuilding & Engineering Co. Ltd.: supply and delivery of two all-welded steel limpet dams for work on outer gate pintles, Port Talbot.

British Railways, Eastern Region, have placed the following contracts:

Marshall Andrew & Co. Ltd., London, S.W.1: construction of new accommodation for motormen and guards and alterations to existing accumulator shop to provide further staff accommodation at Enfield Town Station

William Jones, Limited, London, W.1: remedial measures to cutting slopes, blanketing and drainage, at Timberlog Lane, between Laindon and Pitsea

The Atlas Engineering Company, London, S.W.7: supply and delivery of one locomotive axle journal re-turning and burnishing lathe for Stratford Locomotive Works

Higgs & Hill, Limited, London, S.W.8: reconstruction of superstructures of overbridges Nos. 1383 and 1385 at Clapton Station

Sir William Arrol & Co. Ltd., Bridgeton, Glasgow, S.E.: reconstruction of superstructures of underline bridges No. 1915 over Downs Park Road, and No. 1918 over Downs Road, between Hackney Downs and Rectory Road

The Cleveland Bridge & Engineering Co. Ltd., Darlington, Co. Durham: reconstruction of superstructure for British Transport Commission and lengthening for Tottenham Borough Council of underline bridge No. 1946 over Church Road, between Bruce Grove and White Hart Lane

George Longden & Son Ltd., Sheffield, 1: construction of foundations, inspection pits and drainage cladding, of the new maintenance shed and fuelling installation for new diesel maintenance depot at Sheffield Darnall.

British Railways, North Eastern Region, have placed the following contracts:—

Alfred Herbert Limited, Coventry: electric driven combination turret lathe, Darlington Locomotive Works

Raines (H. & V.) Limited, Wakefield: heating and hot water supply installation, Hull Springhead Repair Shops

J. Kilpatrick & Son Ltd., London: electrical installation, York Headquarters Offices.

British Railways, Southern Region, have placed the following contracts:—

The Demolition & Construction Co. Ltd., London, S.W.1: construction of four signalboxes and 21 relay

rooms, extension of electrification, Kent Coast Lines

Peerless Fence & Products Limited, Harefield, Middx.: erection of lineside fencing and alterations to existing fencing, extension of electrification, Kent Coast Lines

P. & M. Contractors Limited, London, S.W.1: renovations, Ford Station

James Longley & Co. Ltd., Crawley, Sussex: new retaining wall, Redhill Station

The Cleveland Bridge & Engineering Co. Ltd., London, S.W.1: reconstruction of bridge, Shortlands Station

Taylor Woodrow Construction Limited, Southall, Middx.: extensions to platforms, Hastings and Tonbridge Stations

Alfred Bagnall & Sons Ltd., Teddington, Middx.: renovations, Weybridge Station

G. N. Haden & Sons, Ltd., London, W.C.1: steam and condensate mains, Brighton Works

Northampton Foundry Company, Northampton: erection of water storage tank, Yeovil Town

Soil Mechanics Limited, London, S.W.3: soil survey, site investigation and trail boreholes, Victoria Eccleston Bridge

The Demolition & Construction Co. Ltd., London, S.W.1: new control station, Canterbury

Faulkner, Greene & Co. Ltd., London, S.E.1: patent glazing to new platform roofs, Weymouth Station.

Cozens & Sutcliffe Limited, Enfield, Middx.: dismantling of high level roof, Cannon Street Station

J. M. Structures Limited, London, W.C.1: staff accommodation, Newhaven Harbour.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follows:—

From Thailand:

8 bogie tank wagons, one metre gauge, to contain aviation jet fuel with a capacity of 25,000 litres.

The issuing authority is the Royal Thai Air Force. Tenders are to be sent in sealed envelopes marked "Tender for 25,000 Litres Bogie Tank Wagons B.E. 2501," to Bid Considering Committee, Directorate of Transportation, Royal Thai Air Force, Don Muang. The closing date is February 17, 1958. The Board of Trade reference is ESB/2151/58.

From India:

4 axleboxes, partly finished for driving wheels, cast steel, class A, grade I, suitable for AWE type of engines to C.Rly. drg. No. WA (SP) 201 alt. nil

12 axleboxes, partly finished, for leading inter and trailing wheels, cast steel, class A grade I, suitable for AWE type of engines to C.Rly. drg. No. WA (SP) 202 alt. nil

13 axlebox guard groove liners B.G. for sub-stock to C.Rly. drg. No. LB. 205 —alt. 1, manganese steel 11 per cent to 14 per cent

200 axlebox guard groove liners for sub-stock to C.Rly., drg. No. LB. 217—

alt. 2, manganese steel 11 per cent to 14 per cent

28 tender axlebox middles with leather shield recess for B/1 loco, cast steel, class A, grade I to C.Rly. drg. No. TW. 224—alt. 4

30 tender axleboxes cast steel with leather shield recess for D/1 loco, to C.Rly. part. Nos. T.W. 51 & 52 on assembly drg. No. 17858

40 axleboxes, cast steel, engine radial, tender front and hand wheel for B/1 loco, to C.Rly. drg. No. WA-1059 alt. 5.

The issuing authority is the Director General of Supplies & Disposals. The tender No. is P/SR/17796-G/1/C. Bids should be sent to the Director General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is February 18, 1958. The Board of Trade reference is ESB/2512/58.

From South Africa:

20,000 lamps 12 V. 1.2 W. telephone jack type, clear to S.A.R. drawing No. 102/6 fig. 7

3,000 lamps 12 V. 4 W. small B.C. D.C. to S.A.R. drawing No. 101/2 fig. 1

1,000 lamps 12 V. 6 W. small B.C. D.C. to S.A.R. drawing No. 101/2 fig. 1

4,000 lamps 12 V. 12 W. S.C.C. small B.C. to S.A.R. drawing No. 102/6 fig. 1

1,000 lamps 110 V. 15 W. to S.A.R. drawing C.S.E. U. 713

3,000 lamps 120 V. 40 W. B.C. D.C. to S.A.R. drawing C.S.E. U. 711

300 lamps 12 V. 10/10 W. to S.A.R. drawing C.S.E. U. 714

300 lamps 30 V. 15/15 W. to S.A.R. drawing C.S.E. U. 715.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. C.26951 Lamps for Signalling," should be addressed to the Chief Stores Superintendent, P.O. Box 8617, Johannesburg. The closing date is February 19, 1958. The Board of Trade reference is ESB/1907/58.

1,300 contact wire ending cones, to S.A.R. drawing CEE.IG.14/8 and S.A.R. specification EMO.56/2.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. C.2154: Overhead Track Equipment," should be addressed to the Chief Stores Superintendent, P.O. Box 8617, Johannesburg. The closing date is March 5, 1958. Copies of a leaflet issued by the Stores Department of the South African Railways regarding instructions for the guidance of overseas tenderers and agents, are available at the Branch. The Board of Trade reference is ESB/1911/58.

Further details regarding the above tenders, together with photo-copies of tender documents, can be obtained from the Branch (Lacon House, Theobalds Road, W.C.1).

The Special Register Information Service, Export Services Branch, Board of Trade, reports that the closing date of the call for cement storage, and railway wagons for Uruguay, recorded in our September 20, 1957, issue, has been postponed to April 10, 1958.

Notes and News

Staff Laid Off by New Haven Railroad.—Some 700-800 men have been laid off by the New York, New Haven & Hartford Railroad, as the result, it is reported, of a recent drop of 14 per cent in freight car loadings.

Newton Chambers & Co. Ltd. and Ransomes & Rapier Limited Merger.—The boards of Newton Chambers & Co. Ltd., and Ransomes & Rapier Limited, have agreed to recommend to their respective shareholders a merger by means of an exchange of four Newton Chambers £1 shares for nine Ransomes & Rapier 10s. ordinary shares. Under the terms of the proposed merger each company will preserve its full identity.

Scottish Region Work Study School.—Sir Ian Bolton, Chairman, supported by members of the Scottish Area Board, and by Mr. James Ness, General Manager of the Scottish Region of British Railways, on January 28 opened the Scottish Region Work Study School at 181, West Regent Street, Glasgow. The premises include lecture and practical workrooms which will be used both for instructional and short appreciation courses. Associated Industrial Consultants Limited has assisted in designing the courses, which consist of lectures and exercises on method study, work measurement, human relations, and other subjects. Outside assignments, film demonstrations, and practical work in the school are included in the syllabus of the instructional courses, which last about three months.

Safety of British Railways.—After the train accident at Dagenham, Eastern Region, on January 30, in which 10 passengers were killed, Mr. J. W. Watkins, Member of the British Transport Commission, stated that it was natural that the public should be concerned at the latest accident, coming within a few weeks of another collision (Lewisham), both involving passenger trains in dense fog. He pointed out that British Railways was the

most intensively used system in the world, running over 23,000 passenger trains each day and carrying over 1,000,000,000 passengers a year, more than double the number carried in the Class I railways of the U.S.A. The risk of death to a passenger in a train in the past 10 years, he added, had been one in 24,000,000 journeys, or, in terms of number of deaths to miles travelled from 1943 to 1955, 734,000,000 miles travelled to each fatality.

Monte Carlo Rally.—British Railways motorcar ferry, *Lord Warden*, made a special crossing in inclement weather from Dover to Boulogne recently, conveying competitors and their cars in the Monte Carlo Rally. Arrival was 15 min. ahead of time. From Boulogne the ship sailed without passengers, through snow squalls and sleet, to Southampton for a nine-week refit.

Faster Diesel Railcar Services between Darlington and Penrith.—Train timings between Darlington and Penrith have been accelerated as from February 3. The total journey time between these points will be reduced by approximately 20 min.; the faster train working has enabled an additional service to be introduced in each direction between Appleby and Penrith. Diesel working was recently introduced between these towns; start-to-stop times for through trains for the 64½ miles are now around 2 hr. flat.

Trial Monorail Installation in Tokyo.—As part of its plan to find a solution to traffic congestion, the municipality of Tokyo is examining the possibilities of overhead monorail systems. A 1,200-ft. trial line at Ueno was completed on October 14, 1957, and is now in operation for trial purposes. The line runs from one section of the Tokyo Zoological Gardens to another, crossing a road and a reversed track tramway en route. It is to be opened to the public when trials are completed, but is regarded mainly as the pilot line for a possible much more extensive installation. The running surface is formed in a shallow trough on the upper surface of a box girder built up from steel

sections and sheet. This girder is supported by pillars fabricated from sheet and angle steel. The train is composed of two coaches, each 30 ft. 6 in. long. Each car hangs from two bogies with two pneumatic-tyred running wheels for each bogie. Two 30-kW. electric motors drive each coach using current at 600 V. d.c. Two guide wheels at each end of the bogie, also fitted with pneumatic tyres, run on the side surface of the box girder and keep the tandem running wheels on the centre of the track.

U.S.A. Railways Seek Authority for Rate Increases.—Representatives of the U.S.A. railways last week stated before the Interstate Commerce Commission that their financial future depended on the granting of freight rate increases. Selective increase, it was stated, averaging about 3 per cent, would mean \$570,000 a day to the Class I railroads.

Prompt Movement by Train of Motorcars for Export.—A request for movement of 138 motorcars from Luton to Newcastle for shipment thence to Canada and the U.S.A., was received by the British Railways, London Midland Region, goods agent at Luton on January 25. The first special train had left by January 28 and the whole of the consignment was on its way by midday on January 30. Because of the urgency of the movement, additional railway cartage vehicles and staff were called in from other stations, and motor drivers, passenger porters and supervisors helped to load the cars.

Railway Traffic to Cape Town Harbour.—The South African Minister of Transport, Mr. B. J. Schoeman, has outlined the emergency plans to keep fruit exports moving after the fire last week which destroyed the greater part of the fruit pre-cooling stores in Cape Town harbour. The carriage by rail of grapes and plums to the harbour has already been resumed, and the fruit is being loaded direct into the refrigerated holds of the *Clan Macaulay*, which will act as a floating cold store until it is full. The same will be done with other specially chartered fruit ships as they arrive. Some fruit, notably pears, the Minister has stated, is to be moved by fast train to Port Elizabeth.

Diesel Maintenance Depot at Crewe.—Reference was made in the article in our issue of November 22, 1957, on the new diesel maintenance depot at Crewe, London Midland Region, to certain equipment which was stated in the article, based on particulars received from the London Midland Region, to have been installed. Information has been received from the department of the Public Relations & Publicity Officer of the Region that some of this equipment has not yet been installed, namely: the light movable platforms for work above rail level; the electrically-operated hoist block for unloading heavy stores; the fuel installation and degreasing machine; the storage tank for used lubricating oil; the battery-charging facilities and water supply points, and the Atlas wheel profile turning machine.

Ulster Transport Authority First Surplus.—The report for the year ended September 30, 1957, of the Ulster Transport Authority shows that the U.T.A. had a surplus last year for the first time since it was formed in 1948. The trading balance for the year was £302,365, an improvement of £413,580 over the previous

Publicising Modernisation Progress



Progress in implementing British Railways modernisation plan is featured in the display arranged on the departure concourse at Euston by the department of the Public Relations & Publicity Officer, London Midland Region

year, when there was a deficit of £111,215. After loan interest and annual capital redemption is deducted from the trading balance a surplus of £93,772 remains, reducing the carry-forward deficiency to £2,400,453. Mr. G. B. Howden, the chairman, stated last week that the Authority was rapidly reaching the stage when it could not pass on to the public increased costs—particularly salaries and wages—because of the ability of a substantial section of the public to provide itself with alternative transport.

Broom & Wade Limited Results.—Group profits of Broom & Wade Limited, manufacturers of air compressors and pneumatic tools, for the year ended September 30, 1957, fell by 9 per cent to £566,046 from £623,658 for 1955-56, before deducting £281,059 (£325,085) for tax. The ordinary dividend is maintained at 12½ per cent.

Richard Thomas & Baldwin Limited.—The group manufacturing and trading profit of Richard Thomas & Baldwin Limited for the year ended September 28, 1957, was £9,694,407 (£10,075,840). After adding income from investments, and deducting depreciation at £2,294,906 (£2,008,490) and taxation at £3,417,452 (£4,056,397), the net profit was £4,264,563 (£4,313,848). A dividend of 13½ per cent was recommended.

Large Consignment by Zeebrugge Harwich Ferry.—Specially fitted British Railways wagons have been despatched to Venice to pick up three very large pieces of oil refinery equipment destined for the Isle of Grain, Kent. The consignment is an extraction plant. It includes a 140-ft. long solvent stripper, weighing 31 tons; an extract tower measuring 85 ft. 6 in. by 5 ft. 6 in., weighing 22 tons; and a waterwash tower measuring 57 ft. 2 in. by 3 ft., weighing 9 tons. The load will travel in one train throughout its journey and will be routed via Brenner, Kufstein, and Aachen, and is expected to reach Zeebrugge about February 10. At Zeebrugge, the complete train will be loaded onto one of the Eastern Region train ferries for shipment to Harwich. The Harwich-Zeebrugge train ferry often handles exceptionally large consignments; but the solvent stripper which, with a part removed for loading purposes, will be 127 ft. 3 in. long, is the longest item ever to be carried. From Harwich, the extraction plant will be conveyed to the Isle of Grain via Temple Mills, Crouch Hill, Gospel Oak, Willesden, and Kew.

Accident in Fog near Dagenham East Station.—The 6.35 p.m. train from Fenchurch Street to Shoeburyness ran into the rear of the 6.20 p.m. Fenchurch Street to Southend train in thick fog at 7.35 p.m. on January 30. Both trains were steam hauled. The accident occurred about 100 yd. west of Dagenham East Station, on the London, Tilbury & Southend Line of the Eastern Region. The tank locomotive hauling the second train was running bunker first. It demolished the rear of the last coach which contained the guard's compartment, and damaged the rest of this and the rear of the next coach; all the casualties, 10 dead and 87 injured, occurred in this part of the train. An electric train of the London Transport District Line on an adjoining track stopped opposite the crash when it hit some debris thrown up by the force of the collision. The line was reopened to traffic at 1.40 p.m. on the following day. In his statement to

the House of Commons on the following day, the Minister of Transport & Civil Aviation announced that he had appointed Brigadier Langley, an Inspecting Officer of Railways, to hold the inquiry into the accident. The Minister expressed the sympathy of the House for the relatives and friends of those who lost their lives or suffered injury.

Reducing London Underground Station Stops.—The poster reproduced in the accompanying illustration has been issued by London Transport with the object of impressing on passengers the importance of the orderly speed and promptness of

gallantry. On October 18, 1957, he saved the life of a passenger who had fallen between platform and train after leaving the train while it was still moving. At considerable personal risk Porter Hird got down between the platform and moving coaches and held the passenger in an upright position until the train came to a standstill, thereby undoubtedly minimising the extent of the injuries sustained by the passenger. In making the presentation, Mr. Johnson congratulated Porter Hird on his courage and prompt action; Mr. E. W. Arkle, Director of Traffic Services, London Midland Region, who was present at the ceremony, also commended his presence of mind.

General Electric Co. Ltd. Interim Dividend.—The General Electric Co. Ltd. has cut its interim dividend from 4½ to 3½ per cent for the year to March 31, 1958. The board has stated that while turnover has shown an increase, the pressure on profit margins envisaged in last year's report has continued, and provisional results for the first nine months' trading, with an estimate for the remainder of the year, indicate a marked decline in profits.

Reduction Urged in State Spending.—A call for a "decisive restriction of State spending," especially in the less productive fields, is made by the National Union of Manufacturers in its annual Budget recommendations. In the circumstances, the Union does not believe that any major tax relief can be looked for, and that all changes in taxation must be aimed directly at increasing the national production, and making British industry better able to meet the foreign competition, especially in view of the proposed Free Trade Area agreement. It is claimed by the National Union of Manufacturers that the most effective contribution the Government could make would be to enable industry to renew and extend its equipment on terms comparable with those enjoyed by nearly all its foreign competitors. The restoration of the investment allowance to 40 per cent would "probably be the simplest step in this direction," and the National Union strongly urges this. The rates of wear and tear allowances should also be increased, it is maintained, to keep step with falling money values. As to surtax, the raising of the starting limit is urged, from £2,000 to £5,000.

THE UNFORGIVING SECOND

WHAT governs the number of trains that can be run on the Tube with stops every quarter-mile? First, the technicalities—the acceleration and deceleration of the trains, the system of signalling. . . . Second, the time that trains must wait at the platform while passengers get on and off.

In fact, the capacity of a line, however technically perfect, depends finally on the orderly speed of its passengers. Londoners, as well as London Transport, can make or mar the efficiency of the service. Times familiar old cries of London—"Let 'em off first, please," "Hurry along, please," "Stand clear of the doors"—can mean an extra train during the vital hour round six o'clock. This is not an exhortation but a fact: when London Transport is running so many trains as possible, seconds leaped off the waiting time at platforms may add up to an extra train.

In the rush hours, London Transport's passengers finally decide how many trains can be run—or, more to the point, whether the extra trains put in the timetable to run during the busiest hour of the day will in fact get through. That is the reason for the lesson here: experiment at Liverpool Street station on the Central Line.

MAKE THE MOST OF YOUR PUBLIC TRANSPORT



Poster issued by London Transport, showing how passengers can help to increase line capacity

passengers in entraining and detraining at Underground stations. By reducing the duration of station stops, line capacity can be increased and more trains run during peak traffic hours.

Waiting Room Fires Operated by Press-Buttons.—British Railways, Western Region, are experimenting with the heating of waiting rooms by gas fires operated by the public. One such fire has been installed at High Wycombe. Operation of the button turns on the heat for about half-an-hour, after which the fire is automatically extinguished. Experience has shown that solid fuel stoves, including the slow-combustion type, are invariably misused, rarely give satisfaction to the public, and are almost always left with a full draught, leading to fuel wastage and damage to the equipment. The gas fire at High Wycombe is the first to be tried. Others are being installed at Truro, Neath, Newport High Street, Gloucester Central, and Wellington (Salop). Experiments are also to be carried out with electric heating, similarly controlled, at Slough, Newbury, and Taunton.

Award for Sheffield Railwayman.—Mr. H. C. Johnson, General Manager, British Railways Eastern Region, on January 27, at Liverpool Street, made an award to Leading Porter Alan Hird of Sheffield Midland Station in recognition of his

Forthcoming Meetings

- February 7 (Fri.).—The Railway Club, at 320, High Holborn, London, W.C.1, at 7 p.m. Annual general meeting (members only) followed, if time permits, by a photographic display by Mr. R. C. Riley.
- February 7 (Fri.).—Institute of Transport, Western Section, at the Docks Office, Queen Square, Bristol, at 1.15 p.m. Paper on "The conveyance of livestock and perishable traffic by passenger train," by Mr. M. P. Glenister (student).
- February 7 (Fri.).—Stephenson Locomotive Society, Scottish Area, at 25, Charlotte Street, Edinburgh. Members' ten-minute papers.
- February 8 (Sat.).—Stephenson Locomotive Society, Scottish Area, at 302, Buchanan Street, Glasgow, at 2.30 p.m. Paper on "Engines that might have been," by Mr. A. M. Riley.
- February 10 (Mon.).—Institute of Transport, London Section, at the Jarvis

- Hall (R.I.B.A.), 66, Portland Place, London, W.1, at 5.45 p.m. Branker Memorial Lecture. "Problems and economics of air traffic," by Air Commodore W. E. G. Mann, Director-General of Navigational Services, Ministry of Transport & Civil Aviation.
- February 11 (Tue.).—Institute of Transport, West Middlesex Group, at the Control Tower Building, London Airport, at 5.45 for 6.15 p.m. Paper on "Transport in modern times," by Major-General G. N. Russell.
- February 11 (Tue.).—Institute of Transport, Yorkshire Section, at the Great Northern Hotel, Leeds, at 6.30 p.m. Paper on "Transport, public relations and publicity," by Mr. D. S. M. Barrie.
- February 13 (Thurs.).—Institute of Transport, Northern Section, at the Royal Station Hotel, Newcastle-upon-Tyne, 7 p.m. Paper on "Efficiency versus cost in public transport. What is the right answer?" by Sir John Elliot.
- February 11 (Tue.).—Railway Correspondence & Travel Society, East Midlands Branch, at the N.C.S. Guild Room, Toll Street, Nottingham, at 7.30 p.m. Display of slides from the collection of the late Dr. Budden.
- February 12 (Wed.).—Institution of Railway Signal Engineers, London Section, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. Paper on "B.T.C. automatic train control system," by Mr. J. H. Currey.
- February 12 (Wed.).—Institution of Electrical Engineers. Faraday Lecture on "The electrification of the British Railway." Prepared by the late Mr. G. H. Fletcher, delivered by Mr. R. Ledger, at Central Hall, Westminster, S.W.1, at 6 p.m.
- February 12 (Wed.).—Stephenson Locomotive Society, London & Southern Area, at Caxton Hall, Westminster, London, S.W.1, at 6.45 p.m. Paper on "Canadian National locomotives in the 1920s," by Mr. D. W. Allen.
- February 13 (Thu.).—Stephenson Locomotive Society, Midland Area, at the Grand Hotel, Broad Street, Bristol, at 7.30 p.m. "Some reminiscences of a railway and civil engineer," by Mr. W. A. Willox.
- February 14 (Fri.).—Railway Correspondence & Travel Society, London Branch, at the Railway Clearing House, Eversholt Street, London, N.W.1, at 7.15 p.m. Paper on "Early Bagnall locomotives," illustrated by lantern slides, by Mr. W. A. Smyth, Managing Director, W. G. Bagnall Limited.
- February 15 (Sat.).—Stephenson Locomotive Society, North Western Area, at the Conference Room, Central Station, Liverpool, at 7.15 p.m. Paper on "Wirral rail and canal facilities," by Mr. A. Perry.
- February 17 (Mon.).—Permanent Way Institution, at the Headquarters of the British Transport Commission, 222, Marylebone Road, London, N.W.1, at 6.30 p.m. Paper, illustrated by lantern slides, "Where do we go from here," by Mr. K. Brinsmead.
- February 17 (Mon.).—Railway Correspondence & Travel Society, Northampton Branch, at the Liberal Club, Castellan Street, Northampton, at 7.30 p.m. British Railways film show.
- February 19 (Wed.).—British Railways, Southern Region, Lecture and Debating Society, at the Chapter House, St. Thomas' Street, London, S.E.1, at 6 p.m. "Further reminiscences of an

- artist," by Mr. Terence Cuneo, introduced by Mr. F. D. Y. Faulkner, Public Relations and Publicity Officer.
- February 19 (Wed.).—Railway Students' Association, at the London School of Economics and Political Science, Houghton Street, London, W.C.2, at 6.15 p.m. Paper on "Consulting the passenger," by Mr. R. M. Robbins, Secretary and Chief Public Relations Officer, London Transport Executive.
- February 20 (Thu.).—British Railways, Western Region, London Lecture & Debating Society, at Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Paper on "Telling transport in the new railway age," by Mr. S. C. Harvey, Assistant to Chief Commercial Manager (Sales).
- February 20 (Thu.).—Model Railway Club, at Caxton Hall, Westminster, S.W.1, at 7.45 p.m. Talk on "Joint effort—the story of a layout," by Mr. P. D. McCann.
- February 21 (Fri.).—Railway Correspondence & Travel Society, Lancs. & North West Branch, at the D.O.S. Conference Room, Preston Station, at 7 p.m. Paper on "Signalling and traffic," by District Inspector R. Redmond.
- February 22 (Sat.).—Permanent Way Institution, East Anglia Section, at Norwich at 2.15 p.m. Paper on "Modernisation," illustrated by lantern slides, by Mr. D. R. Dalmeyer.

Railway Stock Market

Sentiment in stock markets, more particularly on Wall Street, has been helped by the success of the American earth satellite. The latter has done much to restore confidence in the U.S.A. and could result in a check to the downward trend in business activity in America. British Funds rallied again, partly under the influence of the latest views on British gold and dollar reserves, and partly because of continued expectations that the bank rate will be reduced. It is argued that, a 6 per cent bank rate later in the year would justify a rise of several points in gilt-edged stocks above current levels. Investors are for the present concentrating mainly on British Funds because it is hard to assess the trade outlook. The reduction in the General Electric Co. Ltd., interim dividend from 4½ to 3½ per cent has come as a reminder to the City that earnings of some big companies are still being affected by rising costs which they have decided not to pass on to customers. It seems apparent that trade both at home and overseas is going to become still more competitive, and world trade will not expand for the time being unless it has the stimulus of a recovery of business activity in the U.S.A.

As expected, Canadian Pacific reflected the better trend on Wall Street, but at \$48½, compared with \$48½ a week ago, were little changed on balance. The preference stock changed hands around 54½ and the 4 per cent debentures around 65½, but the coming general election tended to damp down expansion of activity in Canadian stocks. White Pass at \$14½ were virtually the same as a week ago.

A feature in foreign rails has been a sharp decline in International of Central America, the preferred stock reacting from \$125 to \$120 and the common shares from \$19½ to \$17½.

San Paulo Railway 3s. units remained at 2s. 1½d. In other directions, United of Havana second income stock eased further

from 6½ to 6¼, while Brazil Railway bonds were quoted at 5½. Chilean Northern 5 per cent debentures have lost a point at 34½. Costa Rica ordinary stock was 15½ and the first debentures 70½. Mexican Central "A" debentures were 67.

Nyasaland Railways shares were again 10s. 3d. with the 3½ per cent debentures 59½. Midland Railway of Western Australia ordinary stock was again quoted at 7½ and the 4½ per cent debentures 76½.

The brightest feature among shares of locomotive builders and equipment companies has been a sharp rise from 34s. 1½d. to 36s. in Westinghouse Brake on further consideration of the chairman's annual statement. Charles Roberts 5s. shares remained around 8s. and Beyer Peacock 5s. shares were 8s. "ex" the interim dividend. Hurst Nelson rallied from 25s. 9d. to 26s. 1½d. at Glasgow and North British Locomotive were firmer at 12s. 1½d. G. D. Peters kept at 28s. 1½d., while Gloucester Wagon 10s. shares were again 13s. 9d. and Wagon Repairs 5s. shares 13s. 6d.

Disappointment with the lower interim dividend and fall in profits put General Electric shares down to 34s. 3d. compared with 38s. 3d. a week ago. Associated Electrical were maintained at 48s. 3d., while English Electric have strengthened from 47s. to 47s. 6d. Pressed Steel 5s. shares recovered from 12s. 9d. to 13s. 1½d. Birmingham Wagon held last week's improvement to 17s. 3d. and British Timken kept firm at 46s. while Ransomes & Marles 5s. shares have again changed hands around 10s. Tube Investments were 51s. and British Oxygen 29s. 9d. Imperial Chemical moved up to 39s. 9d., because it has been assumed that profits have continued to reflect increased turnover, though the general belief is that the dividend will again be limited to 10 per cent.

OFFICIAL NOTICES

A CHIEF MECHANICAL ENGINEER with exceptional railway, industrial and commercial connections at home and abroad will shortly be free to accept a post as Sales Manager or London and Overseas Representative of a Production Organisation needing the services of a really first-class experienced man.—Reply to Box 503, *The Railway Gazette*, 33 Tophill Street, London, S.W.1.

BRITISH RAILWAYS (Scottish Region). ASSISTANT INSTRUCTOR, SCOTTISH REGION. Work Study School, Glasgow. Applications are invited for the post of Assistant Instructor, Scottish Region Work Study School. Conversant with Work Study Techniques and should preferably have lecturing experience. Will be required to assist in organising Work Study Courses and preparing outside projects. Salary £1,120 rising to £1,285 per annum.—Applications in writing giving age, education, experience and qualifications, should be addressed to the General Manager, British Railways, 302 Buchanan Street, Glasgow, C.2.

ASSISTANTS to MECHANICAL ENGINEER required by Jamaica Government Railway on contract for tour of 3 years in first instance. Salary £1,500 a year. Gratuity at rate of 20 per cent. of salary. Free passages. Liberal leave on full salary. Candidates preferably under 40, should have served an apprenticeship in a locomotive workshop of a railway or a reputable firm of locomotive manufacturers and have had over 2 years' experience of diesel-electric traction, also some experience of steam locomotive and/or carriage and wagon repair. Should preferably possess H.N.C. in mechanical engineering or A.M.I.Mech.E.—Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M2B/42619/RA.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tophill Press, Limited, 33 Tophill Street, London, S.W.1.

